



LWD MEMORY LOG

Gamma Ray

Scale:						
<div>1:240 MD</div>						<div>Company: SRC Energy</div>
						<div>Well: Hood 23N-22C-M</div>
						<div>Field: Weld County</div>
<div>Depth Reference: Driller's Depth</div>						<div>County: Weld State: Colorado</div> <div>Country: United States</div>
Status:	Surface Location:					Other Services:
<div>Final Print</div>			Latitude: 040° 28' 05.488" N			
API No: 05-123-44379-00			Longitude: 104° 47' 47.119" W			Wellbore Survey
Job ID: 8457215	SEC: 20	TWN: 6N	RGE: 66W			
Permanent Datum (P.D.): Ground Level		Elevation: 4734.00 ft	Elev. KB: N/A			
Log Measured From: Rig Floor		Above P.D.	25.00 ft		Elev. DF: 4759.00 ft	Elev. GL: 4734.00 ft
Dates	Interval Logged			Magnetic Field Reference		
Date From: 2017-05-02	Top: (ft) 1770.00	Azi Reference North: True		Dip Angle: (deg)	66.86	
Date To: 2017-05-05	Bottom: (ft) 15315.00	Total Magnetic Field Strength: (nT)		52714		
Spud Date: 2017-03-16	Mag to Reference North Correction: (deg)		7.50 E			
Borehole Record						
Hole Size (in)	From (ft)	To (ft)	Size (in)	Weight (lb/ft)	From (ft)	To (ft)
13.500	25.00	17771.00	9.625	36.00	25.00	1765.00
8.500	17771.00	15315.00				
Deviation Record						
Type	From (ft)	To (ft)	Hole Size (in)	Interval (ft)	Incl Az (Start)	Incl Az (End)
Oil Based Mud	17771.00	15315.00	13.500	17746.00	0.33 0.07	10.62 42.96
			8.500	13564.68	10.62 42.96	89.82 89.27
Acquisition System						
Baker Hughes Cadence	Software Version RT4.1		Rig: PD 562	Other		
PilotStudio	4.0.7570.8		Contractor: Precision Drilling District: RMD	Unit: D&E		

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Log Run Summary

Run No	Bit Run No.	Bit Size (in)	Bit Type	Bit Gauge Length (in)	Assembly Type	Logged Interval		Bit Depth Interval		Date / Time		Circ. Hours (h)
						Top	Bottom	From	To	Start Logging	End Logging	
						(ft)	(ft)	(ft)	(ft)			
1	1	13.500	PDC	4.25	Steerable	0.00	0.00	25.00	1771.00	2017-03-16 12:00	2017-03-17 01:00	10.22
2	2	8.500	PDC	3.00	Rotary Steerable	1758.10	10772.03	1771.00	10784.93	2017-05-02 16:00	2017-05-04 12:34	36.35
3	3	8.500	PDC	3.00	Rotary Steerable	10772.03	15301.78	10784.93	15314.68	2017-05-05 02:06	2017-05-05 23:56	20.54

Crew

Name	Arrive	Depart	Name	Arrive	Depart	Name	Arrive	Depart
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	Wellsite	Wellsite		Wellsite	Wellsite		Wellsite	Wellsite
Matthew Leopold	2017-05-01	2017-05-06	Andrew Hays	2017-05-04	2017-05-06			

Mud Properties Record

Date / Time	Run No.	Measured Depth (ft)	Mud Type	Density (ppg)	Viscosity (cP)	pH	Fluid Loss (cm3)	Oil / Water	Source	Total Chlorides (ppm)	K+ (%)
2017-05-02 13:22	2	1750.00	Oil Based Mud	9.6	22	N/A	8.6	80/20	Suction	47000	0.00
2017-05-03 04:00	2	5010.96	Oil Based Mud	9.6	24	N/A	8.8	78/22	Suction	44000	0.00
2017-05-03 16:00	2	7405.72	Oil Based Mud	9.6	19	N/A	8.2	80/20	Suction	42000	0.00
2017-05-04 04:00	2	10031.43	Oil Based Mud	9.7	21	N/A	8.2	81/19	Suction	44000	0.00
2017-05-04 19:20	3	10785.00	Oil Based Mud	9.6	19	N/A	8.2	81/19	Suction	41000	0.00
2017-05-05 04:00	3	11154.62	Oil Based Mud	9.7	23	N/A	8.6	81/19	Suction	40000	0.00
2017-05-05 16:00	3	13809.77	Oil Based Mud	9.7	21	N/A	8.4	81/19	Suction	39000	0.00

Equipment and Service Data

Run No.	Tool	Serial Number	Measurement	Sensor Offset (ft)	Bit Offset (ft)	Max O.D. (in)	Min I.D. (in)
1	Sensor Sub	ZAPS230921	VSS	11.85	59.43	8.000	3.250
1	Sensor Sub	ZAPS230921	Directional (mag)	11.85	59.43	8.000	3.250
1	Sensor Sub	ZAPS230921	Pressure	32.42	80.00	8.000	3.250
2	ATC_SU	12160768	Near Bit Inclination	5.93	6.73	7.000	4.330
2	ATC_SU	12160768	Near Bit VSS	5.93	6.73	7.000	4.330
2	ATC_MWD	12398343	Gamma (single)	2.81	12.90	7.000	3.250
2	ATC_MWD	12398343	Directional (mag)	12.33	22.42	7.000	3.250
3	ATC_SU	12232312	Near Bit Inclination	5.93	6.73	7.000	4.330
3	ATC_SU	12232312	Near Bit VSS	5.93	6.73	7.000	4.330
3	ATC_MWD	14189576	Gamma (single)	2.75	12.90	7.000	3.250
3	ATC_MWD	14189576	Directional (mag)	12.27	22.42	7.000	3.250

Service and Tool Mnemonics

Mnemonic	Name	Description
GAM	APS	APS EM Module
ATC_SU	ATC_SU	Auto Trak Curve Steering Unit
ATC_MWD	ATC_MWD	Auto Trak Curve MWD
ATC_LCPM	ATC_LCPM	Auto Trak Curve LCPM

Comments


1	Depth measurements obtained from a depth control system not supplied or operated by Baker Hughes. Due to lack of control by Baker Hughes logging engineers, depth calibrations and measurements could not be independently verified.
2	Baker Hughes LWD Run 1 utilized 8 inch APS EM service (Directional-Only) Behind a 13 ½ inch bit and steerable assembly from surface to 1771 feet MD (Surface to 1767 feet TVD). No logging data was acquired during this run.
3	Baker Hughes LWD Runs 2 and 3 utilized 6 ¾ inch NaviGamma services (Gamma Ray and Directional) behind an 8 1/2 inch bit and rotary steerable assembly from 1771 to 15315 feet MD (1767 to 7081 feet TVD).
4	Gamma Ray Apparent (GRAM) is presented 0 to 300 API per customer request.

Remarks

Number	Measured Depth (ft)	Hole Section (in)	Run No.	Remark
1	10775.00	8.500	2	The interval from 10772 to 10785 feet MD (7060 feet TVD) was logged up to 18 hours after being drilled due to a trip out of the hole for a tool failure.
2	15307.00	8.500	3	The interval from 15302 to 15315 feet MD (7081 feet TVD) was not logged due to sensor to bit offset at well TD.

Curve Mnemonics

Presented Curves	Description	Units
ROPA	Depth Averaged ROP 3 ft Average	ft/h
TVD	True Vertical Depth	ft
WOBA	Weight On Bit, Average 1 ft Average	klb
GRAM	Gamma Ray - Apparent 0.5 ft Average	API
GRIM	Gamma Ray Data Point Indicator	unitless
GRTM	Gamma Time Since Drilled	min
TCDM	Downhole Temperature	degF



Company

Well

Interval

Created

SRC Energy

Hood 23N-22C-M

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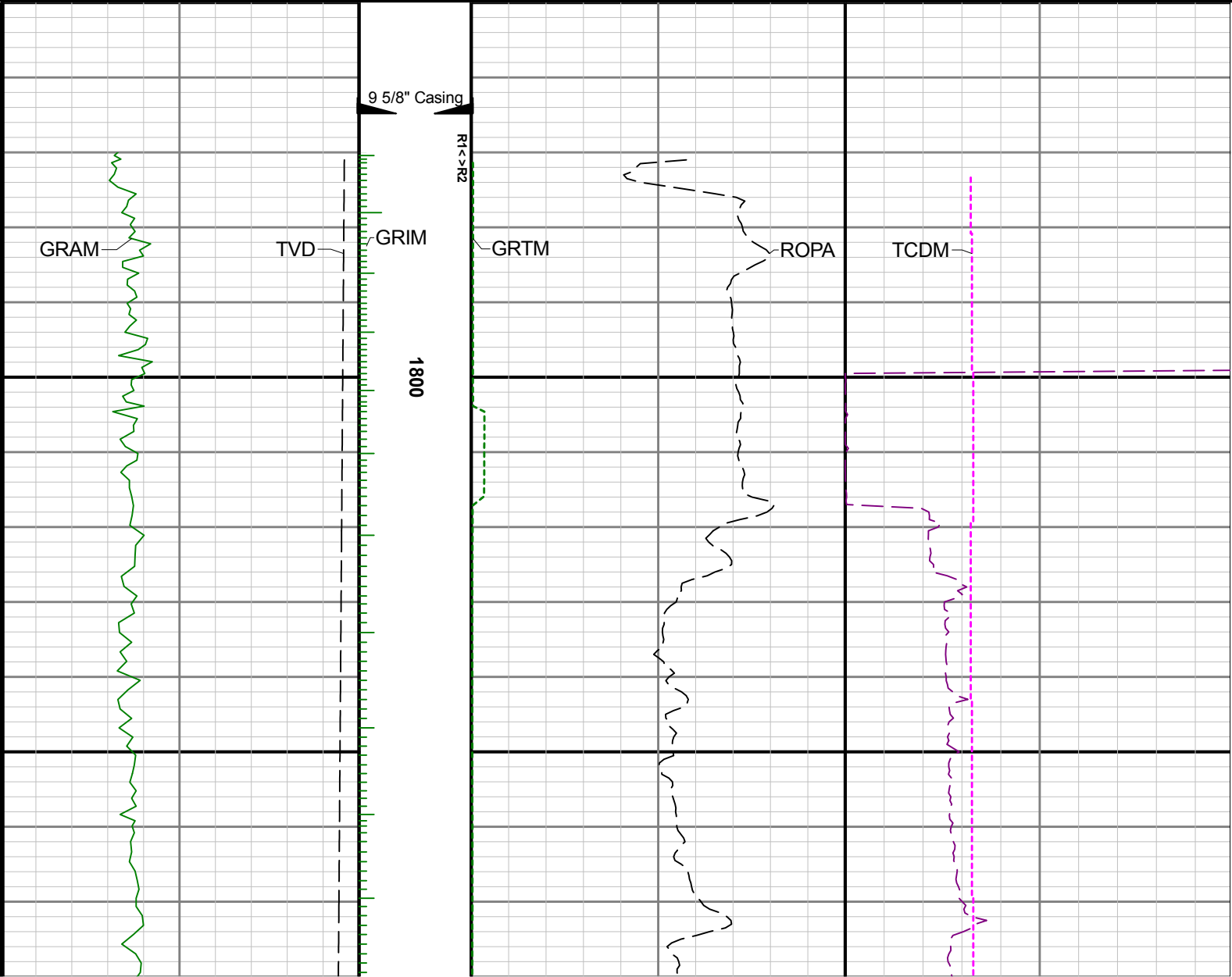
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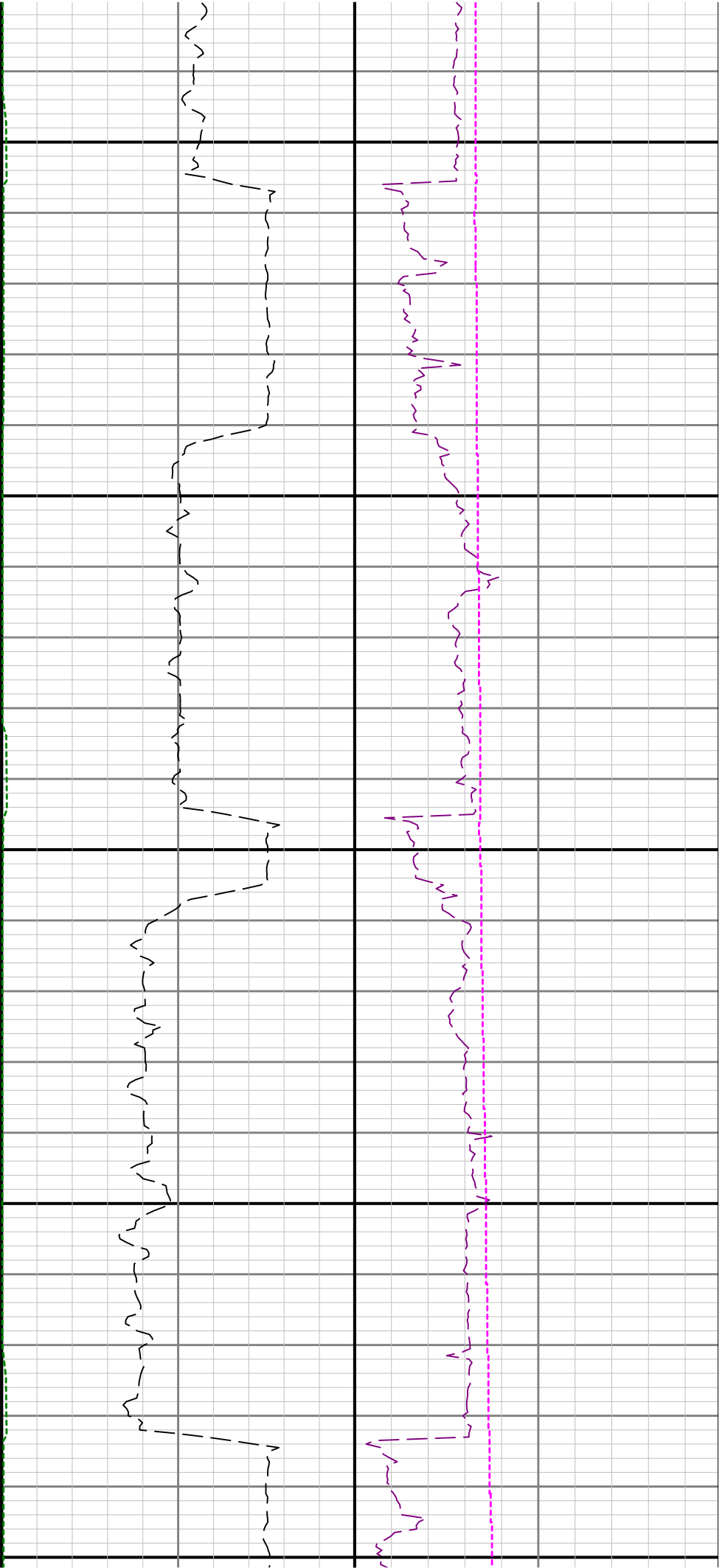
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Top: 1770.00

Bottom: 15315.00

Gamma Ray - Apparent 0.5 ft Average GRAM 0 300	MD 1:240 feet	Gamma Time Since Drilled GRTM 0 600 min	Weight On Bit, Average 1 ft Average WOBA 0 50 klb
API		Depth Averaged ROP 3 ft Average ROPA	Downhole Temperature TCDM
True Vertical Depth TVD 8000 1500 ft		1000 0 ft/h	0 275 degF

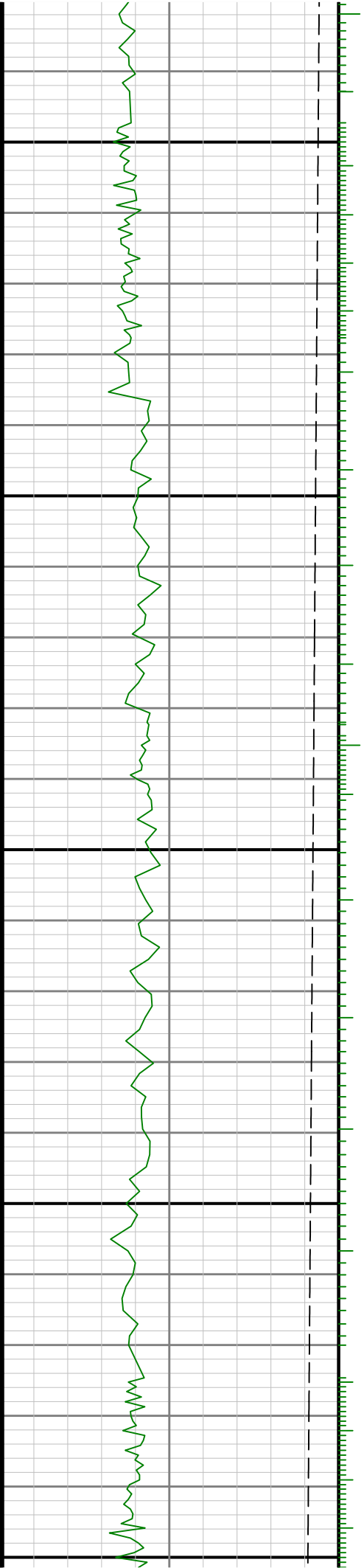


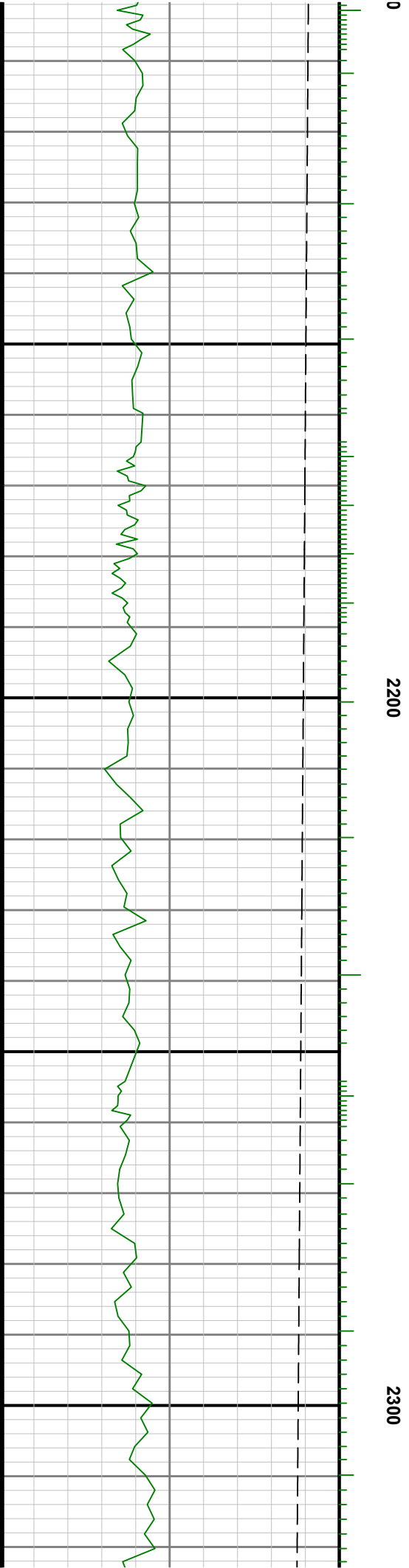
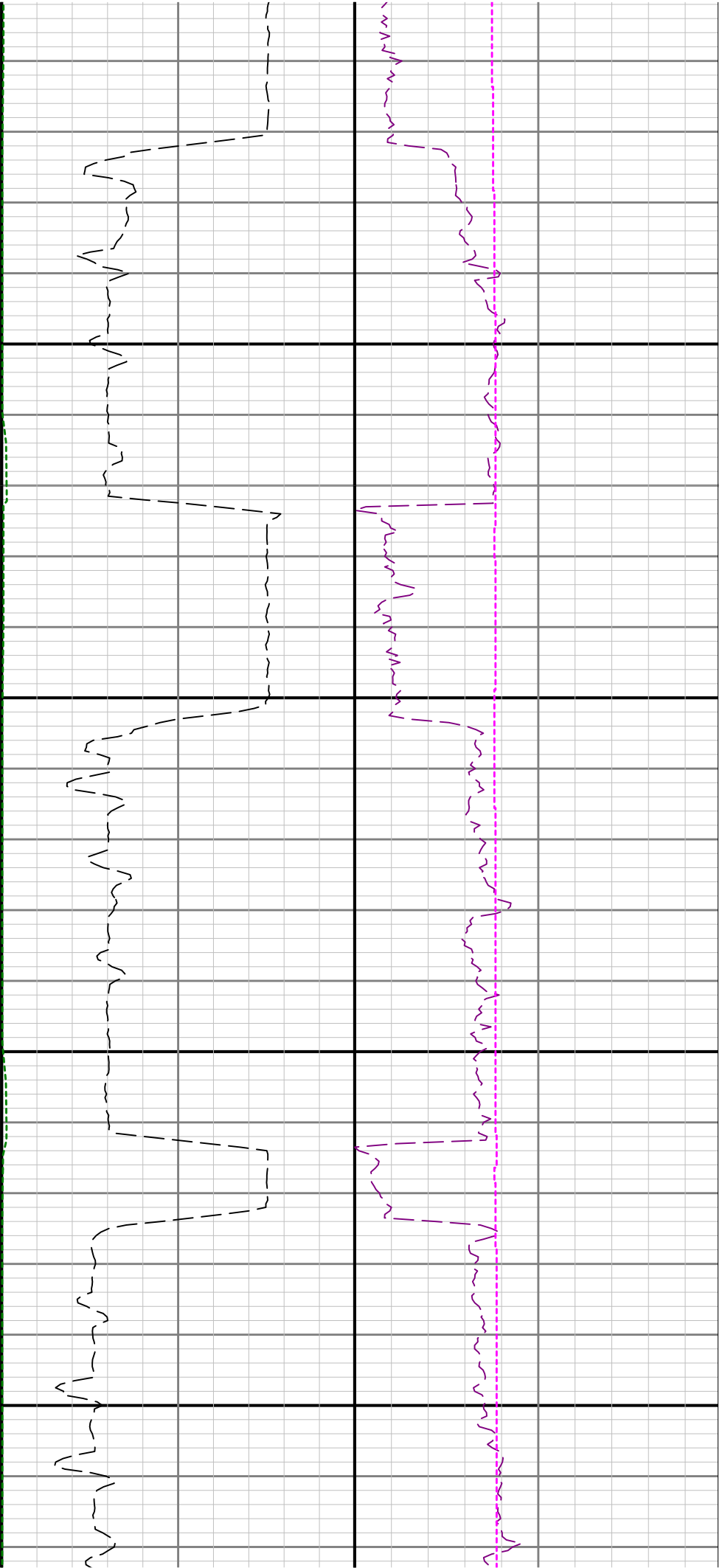


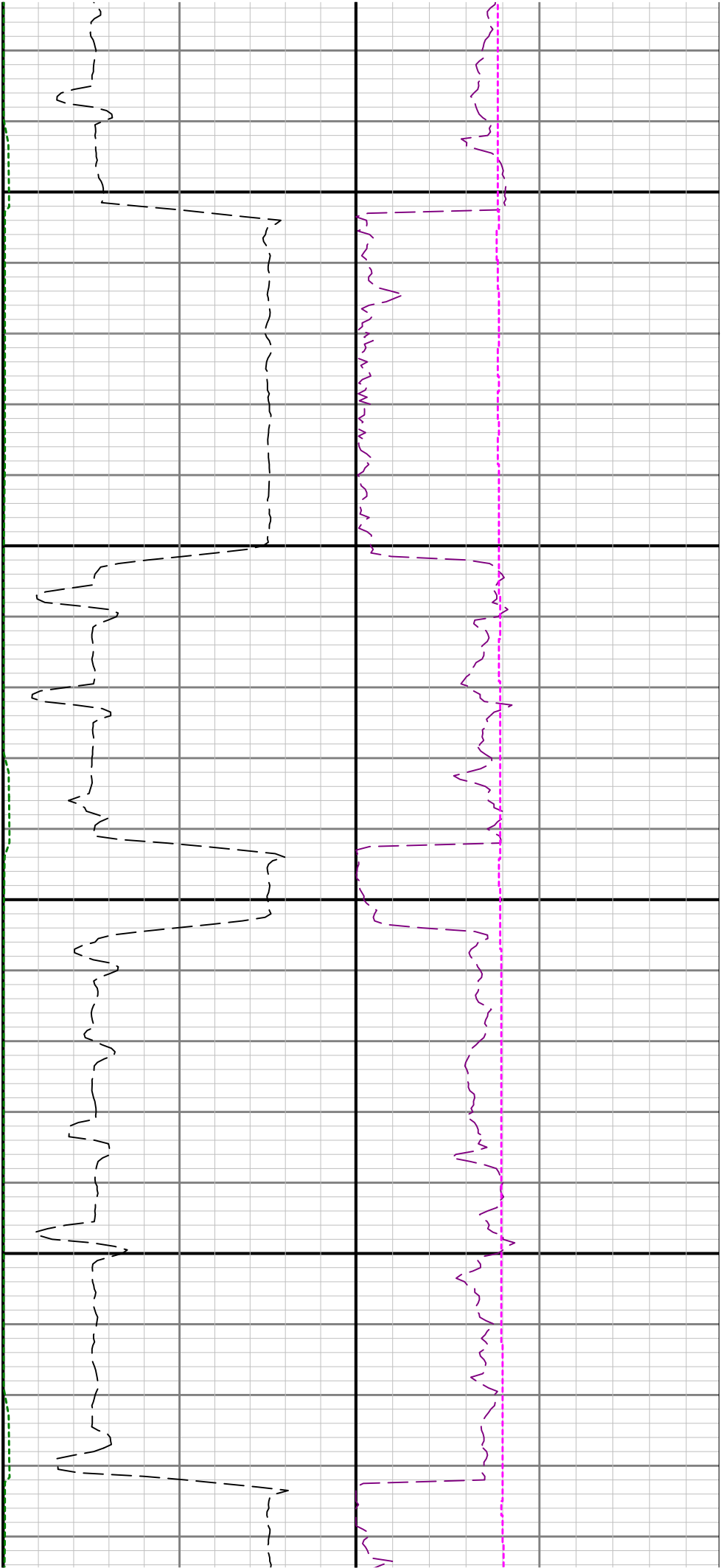
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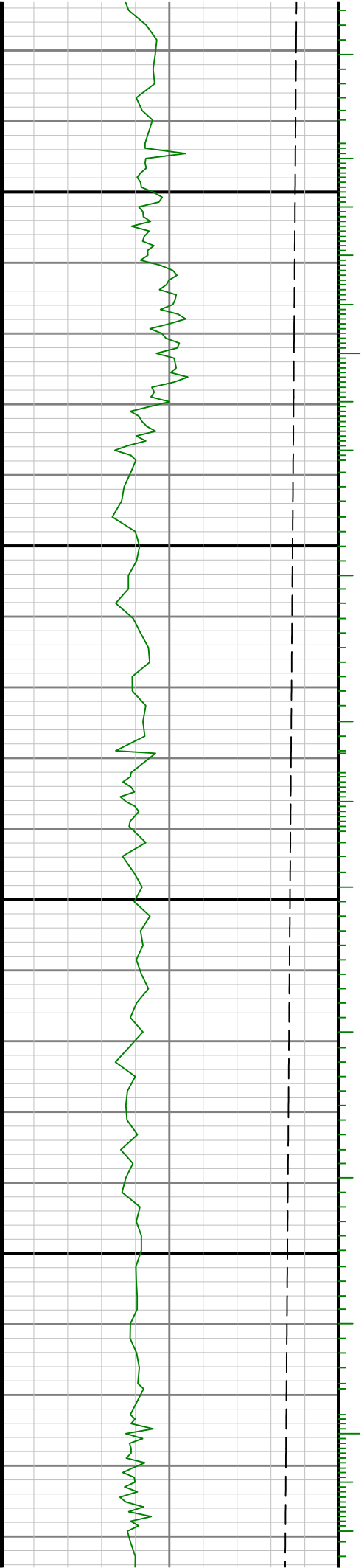


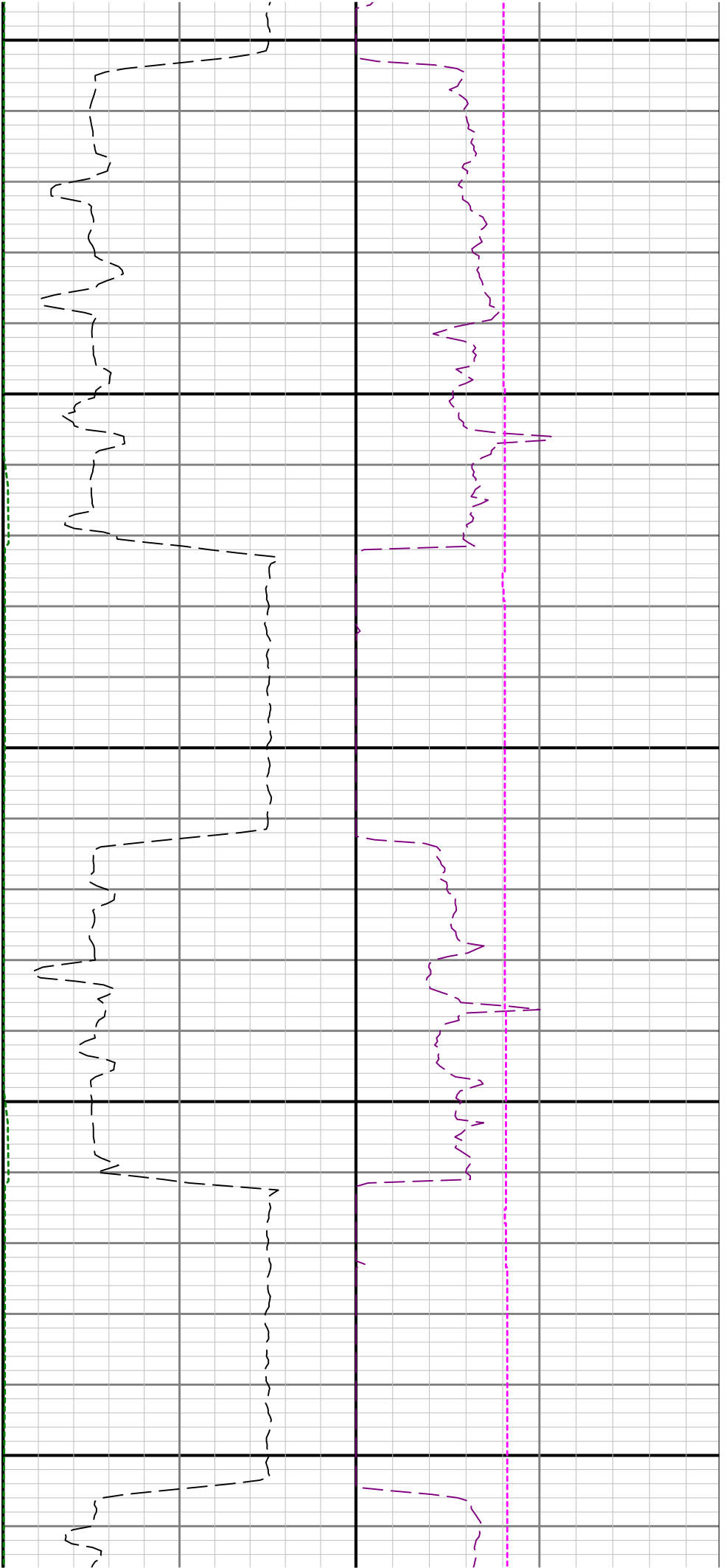




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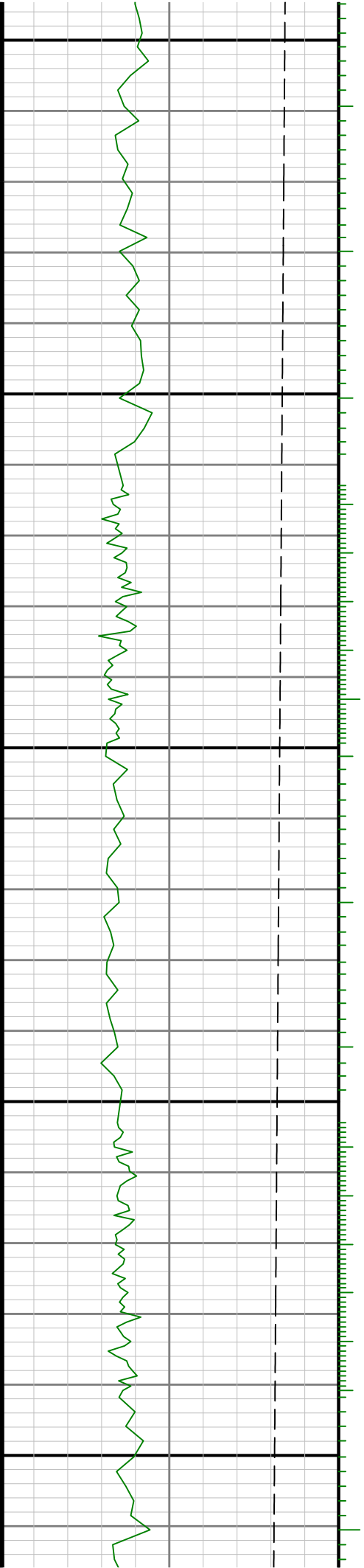
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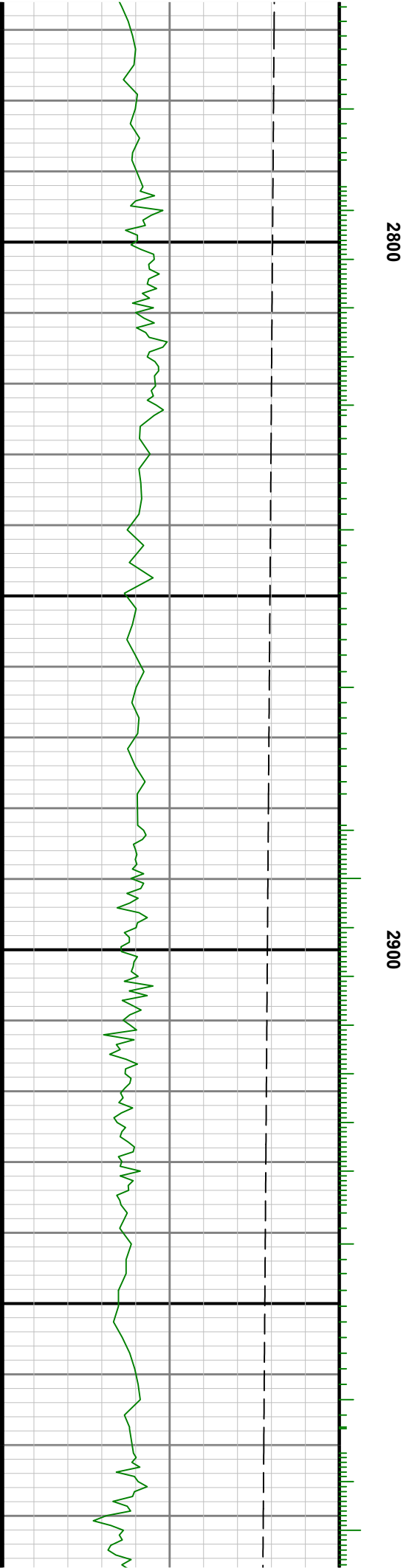
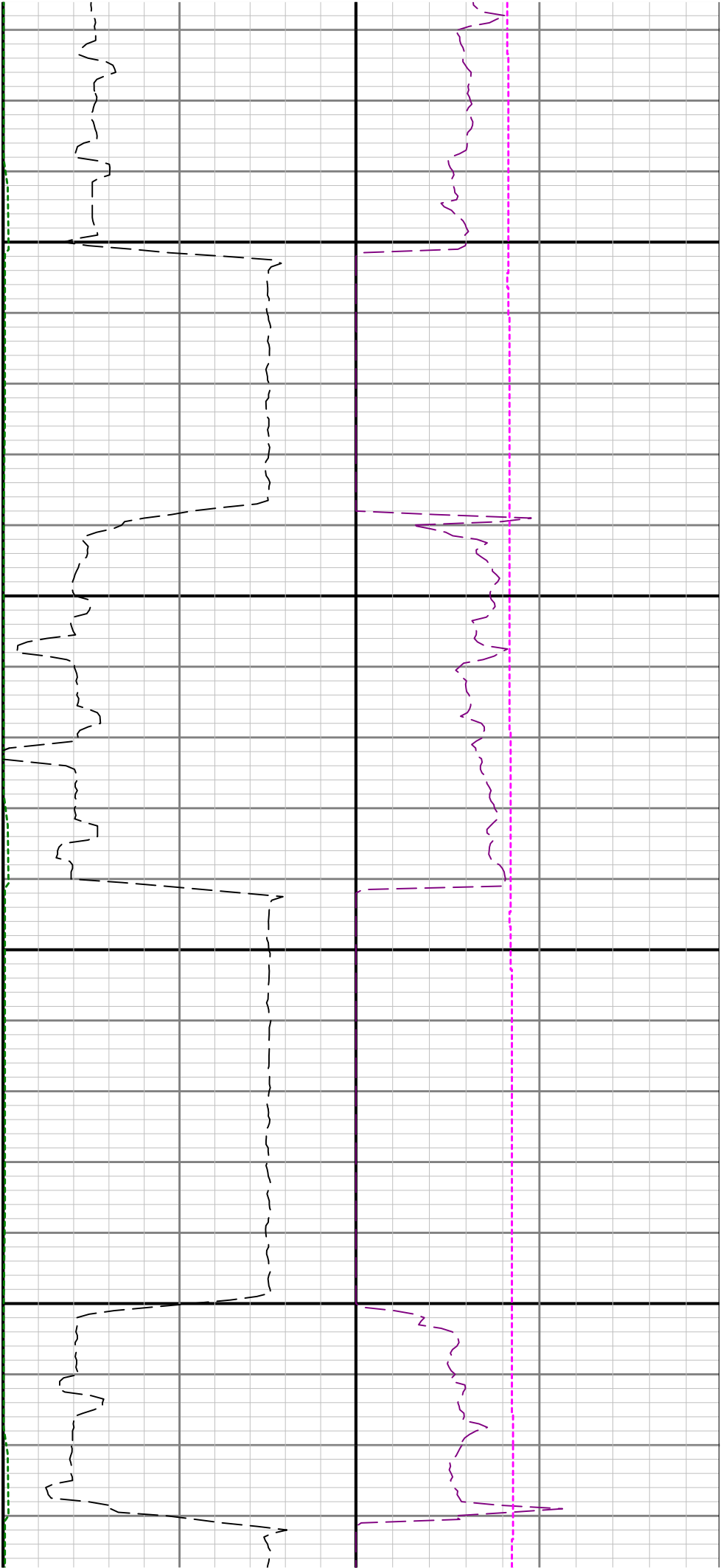


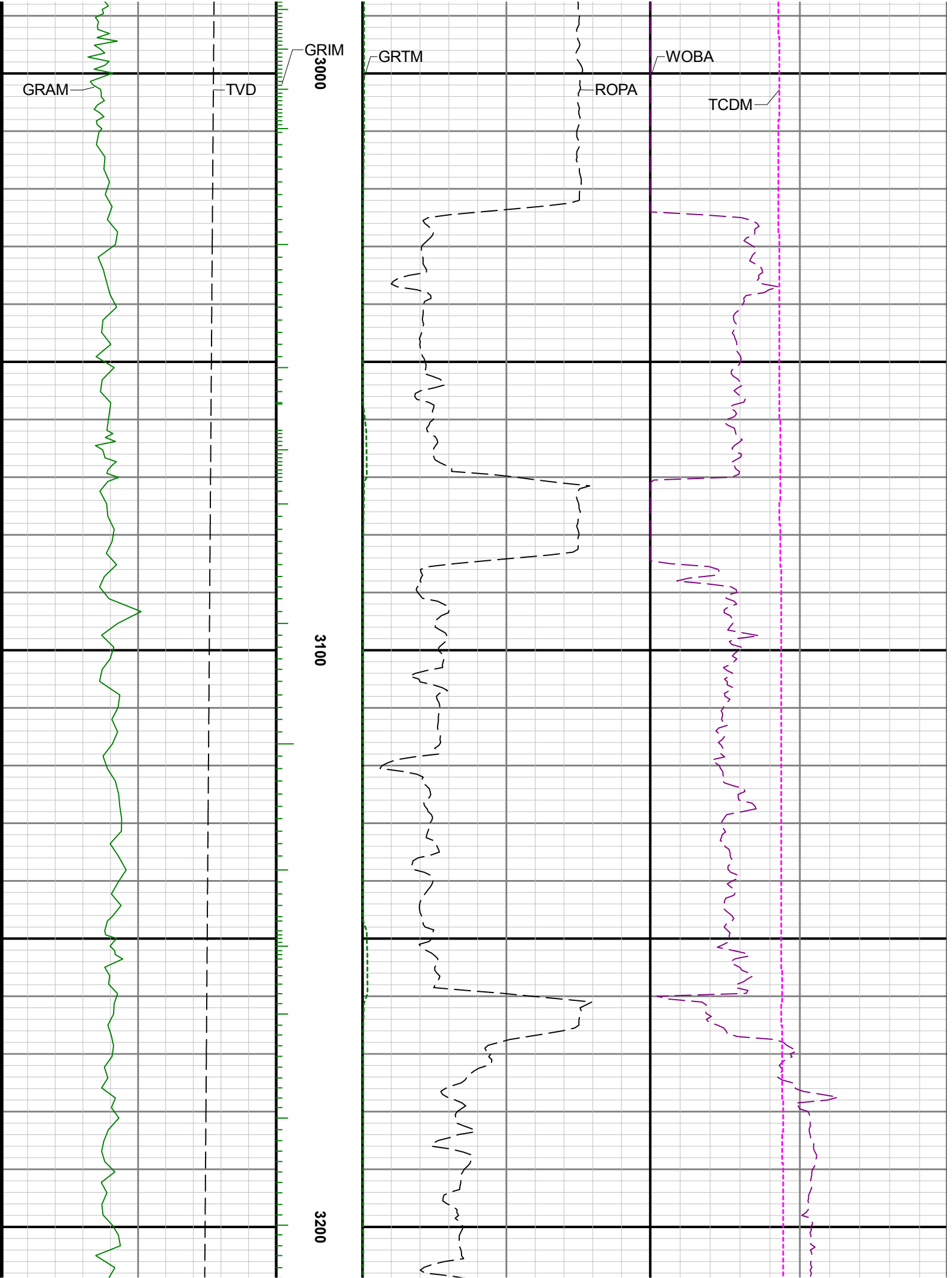


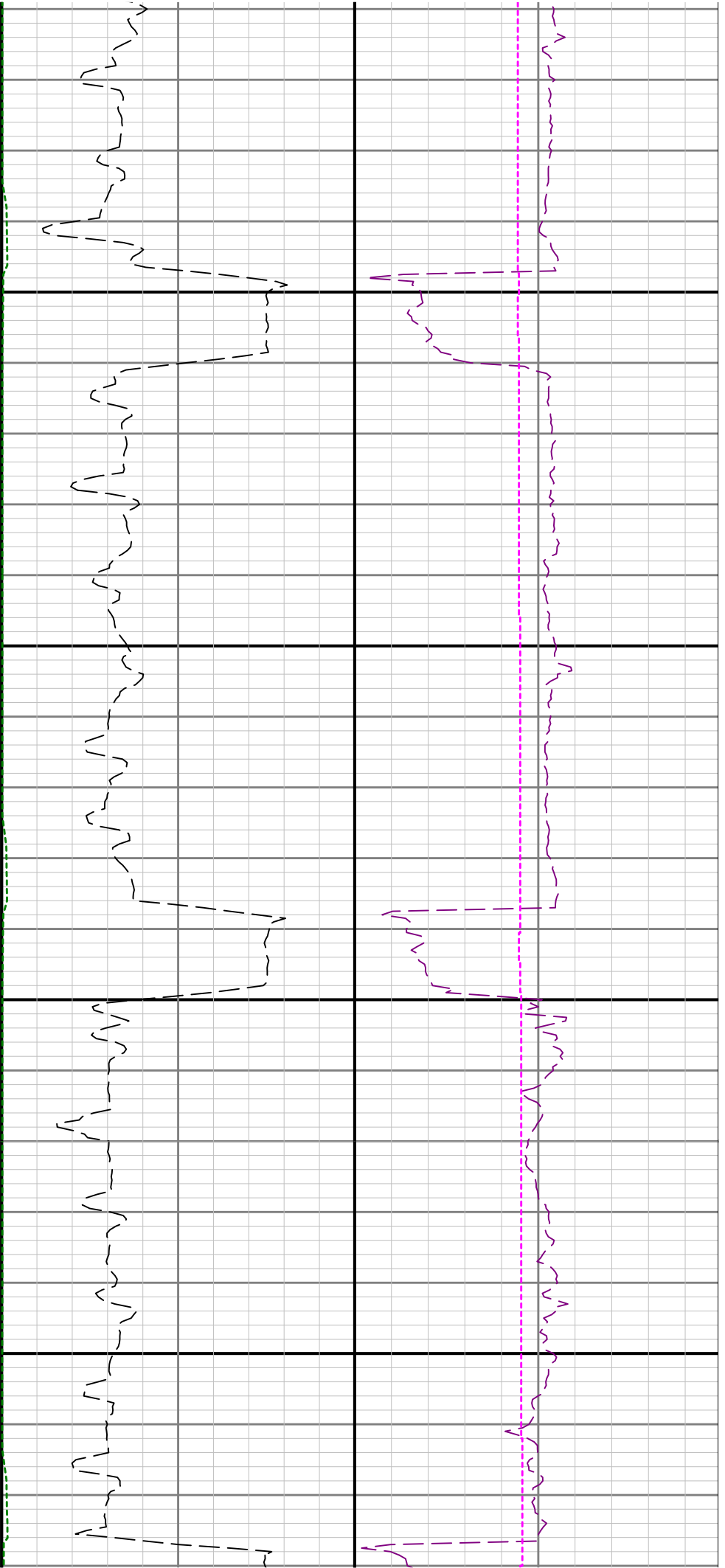
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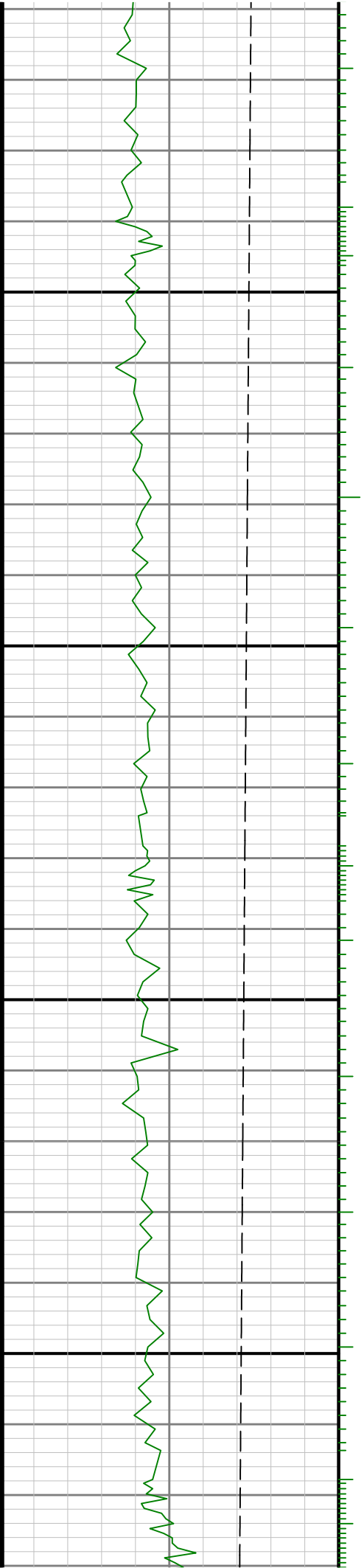


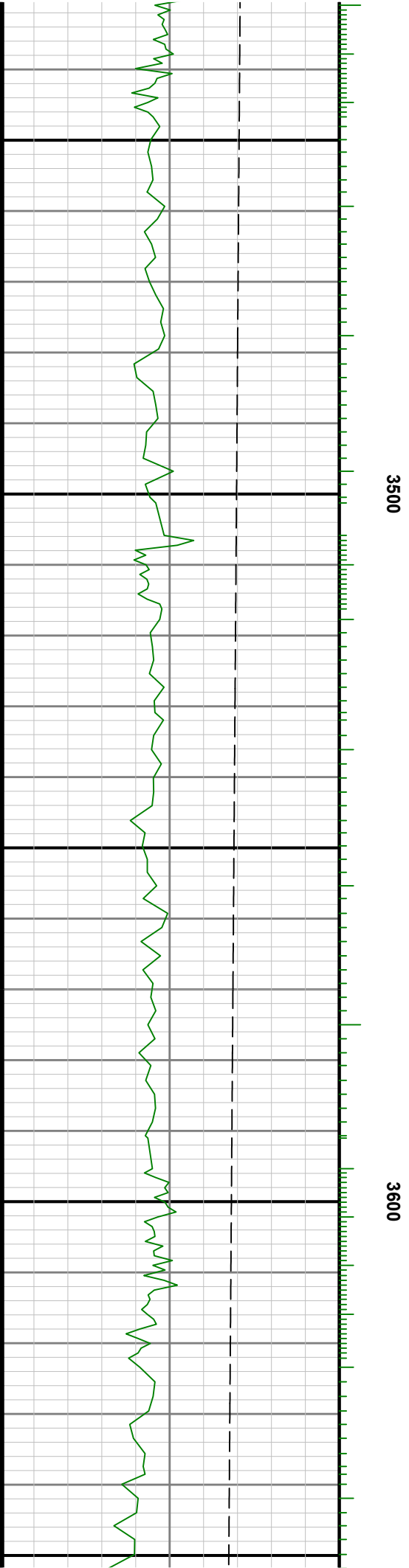
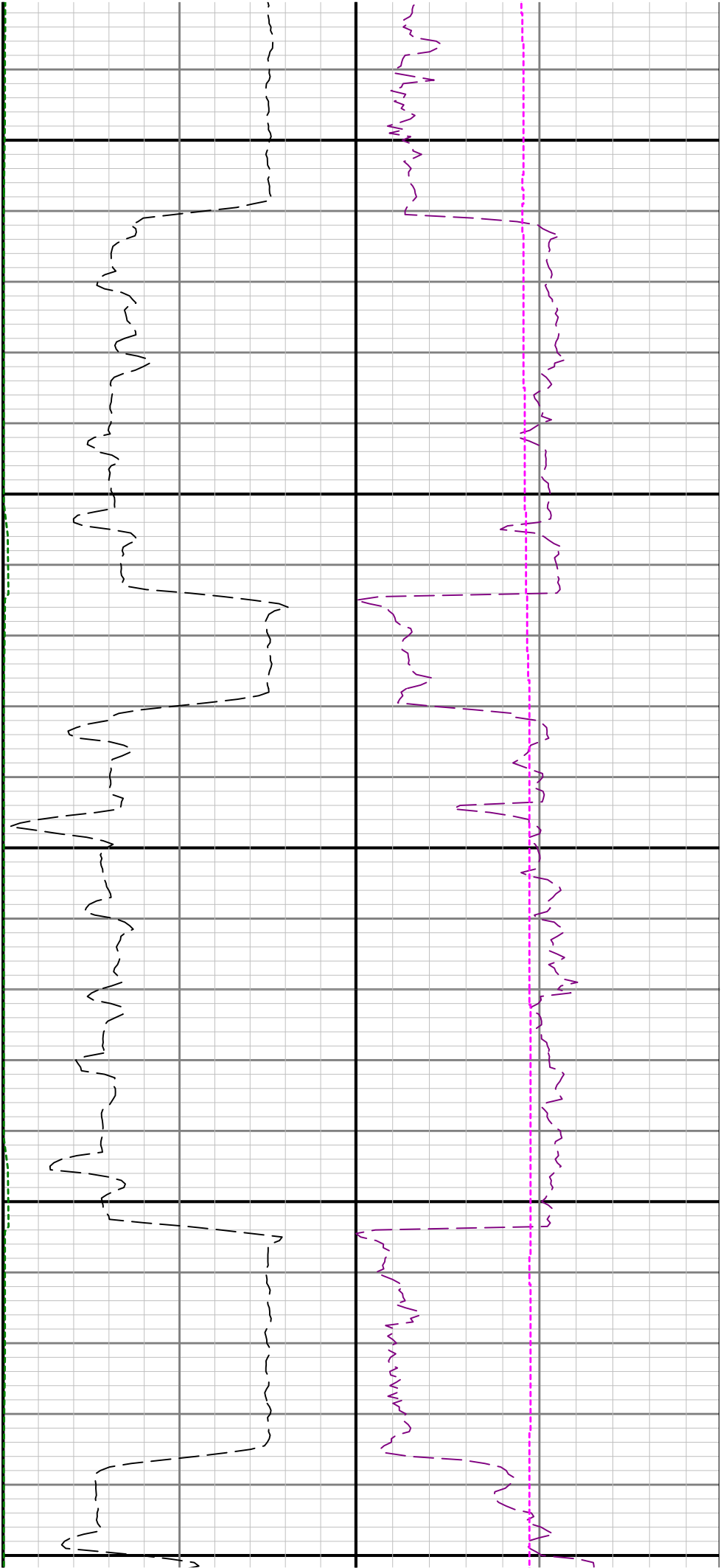


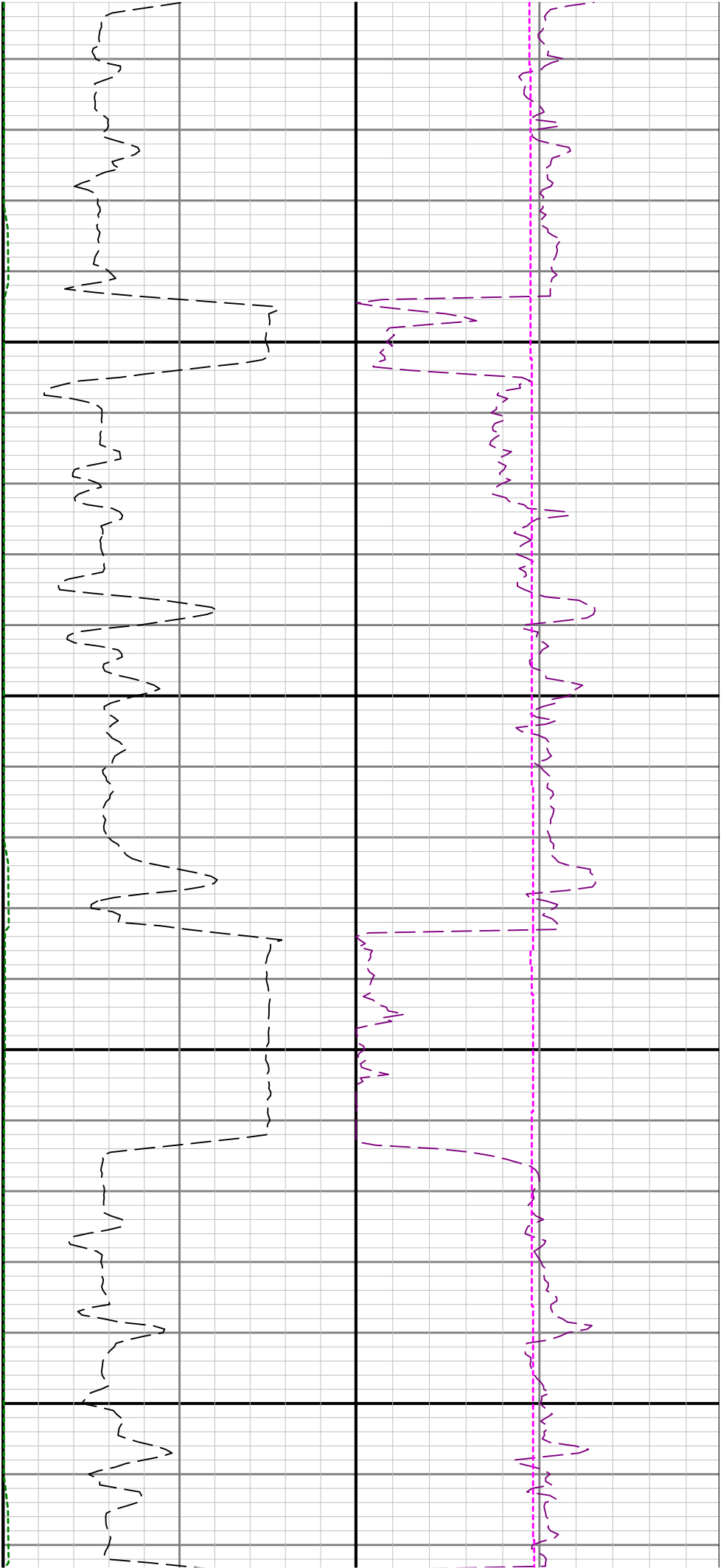


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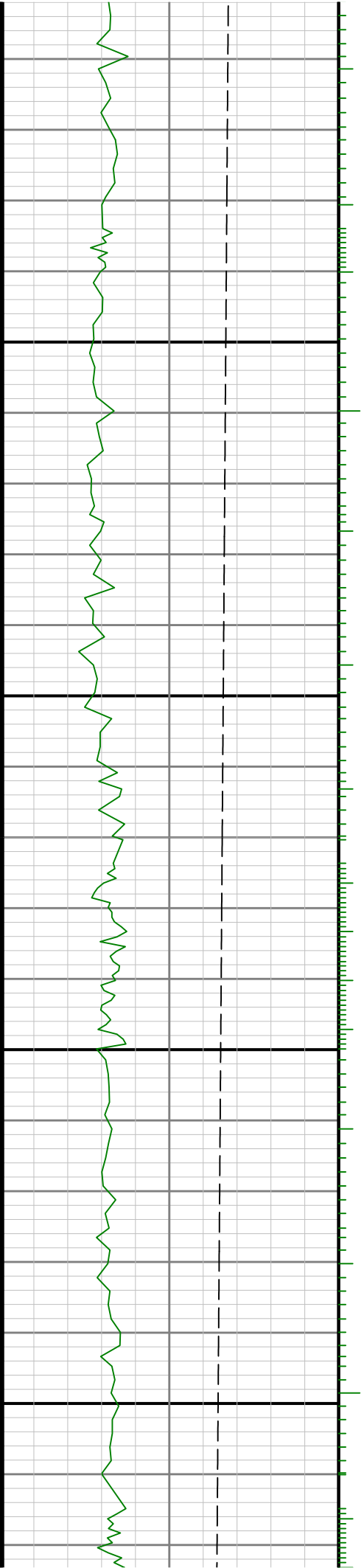


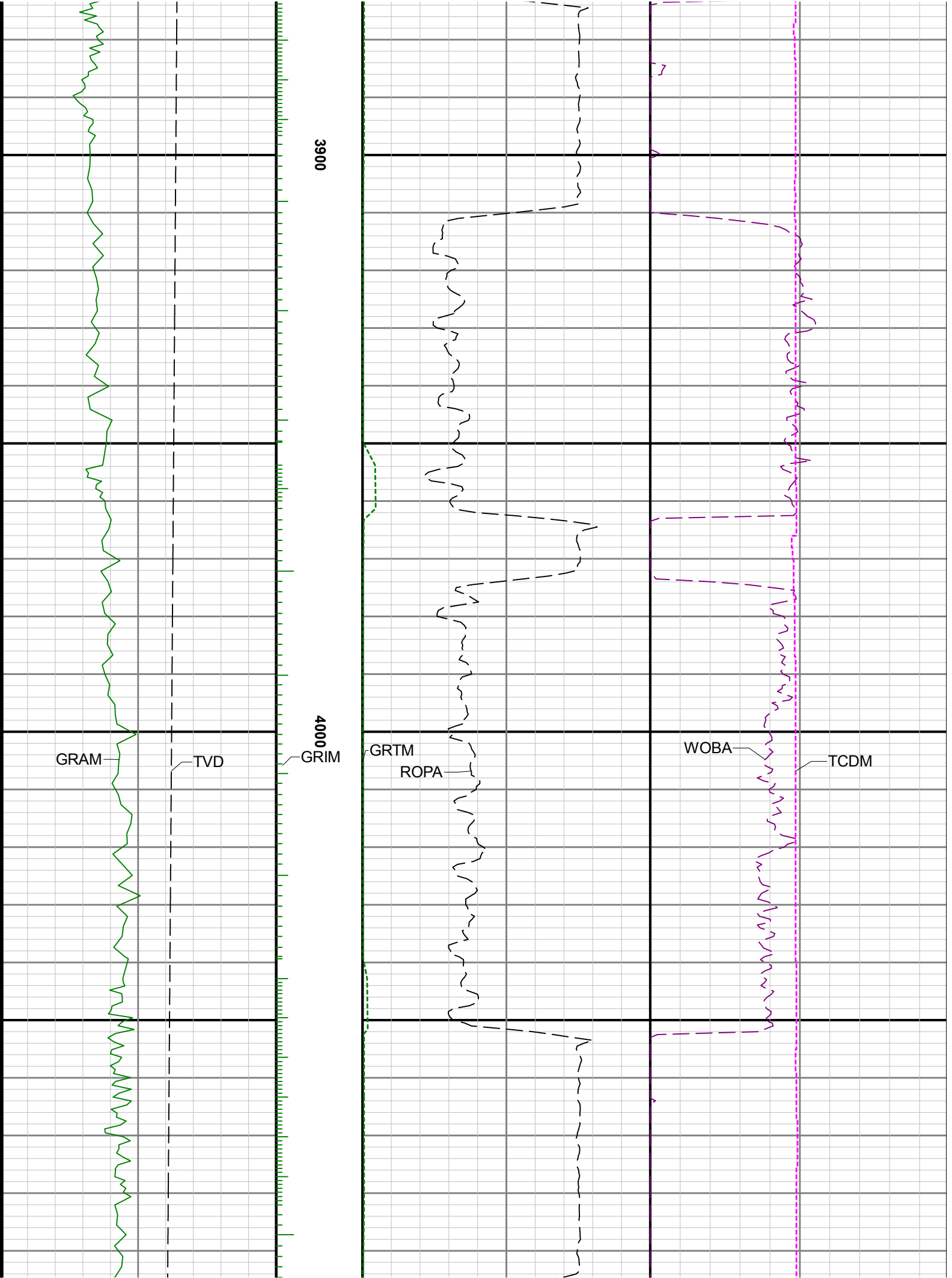


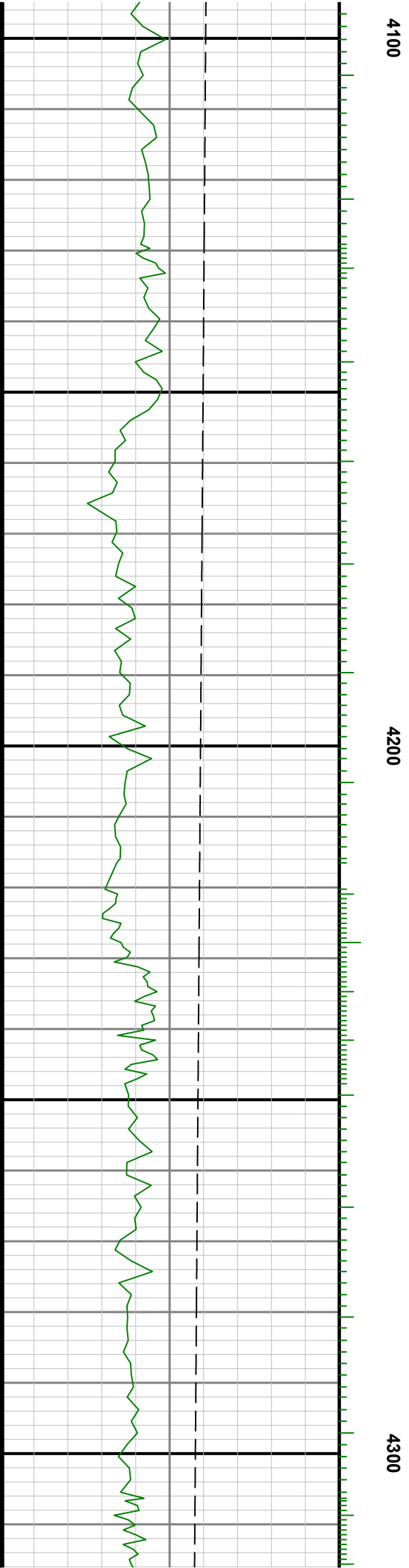
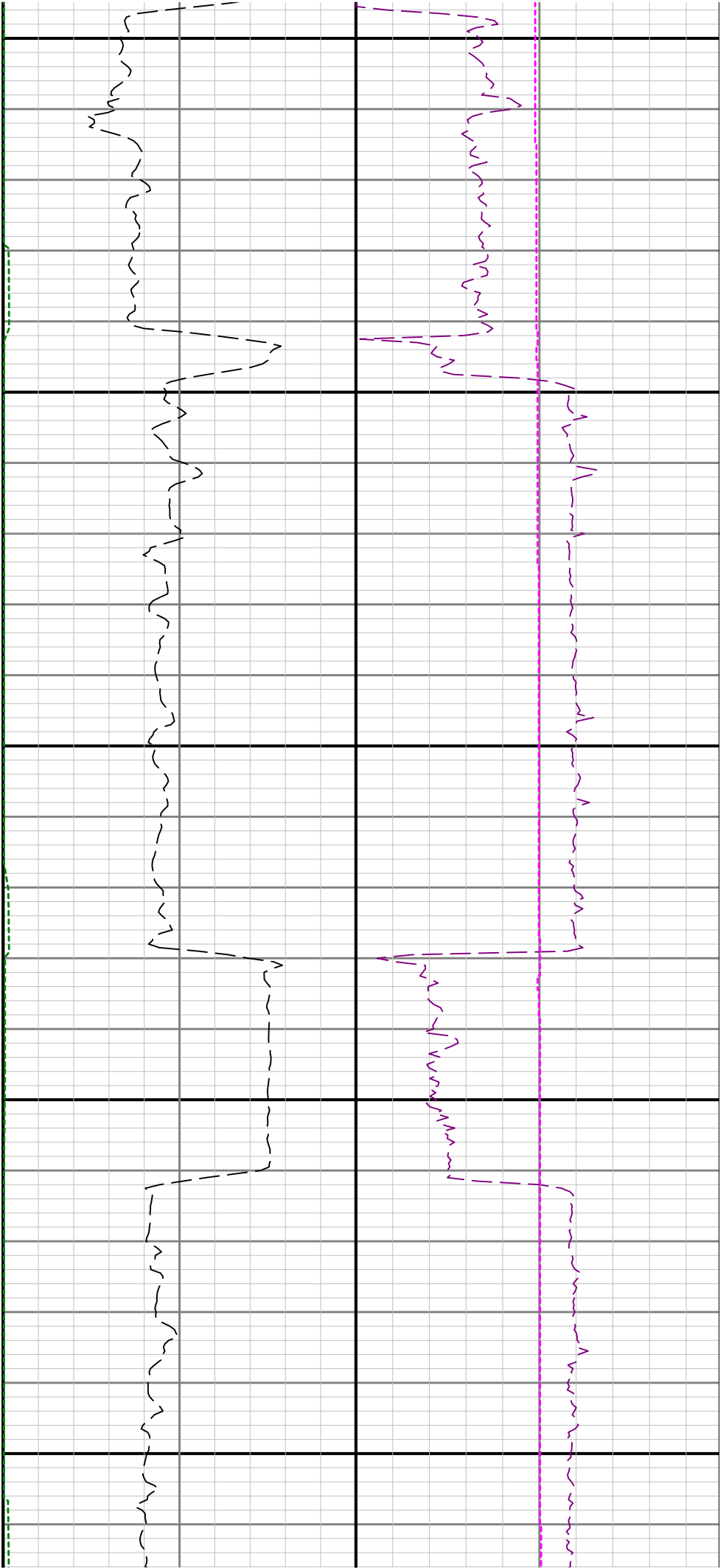


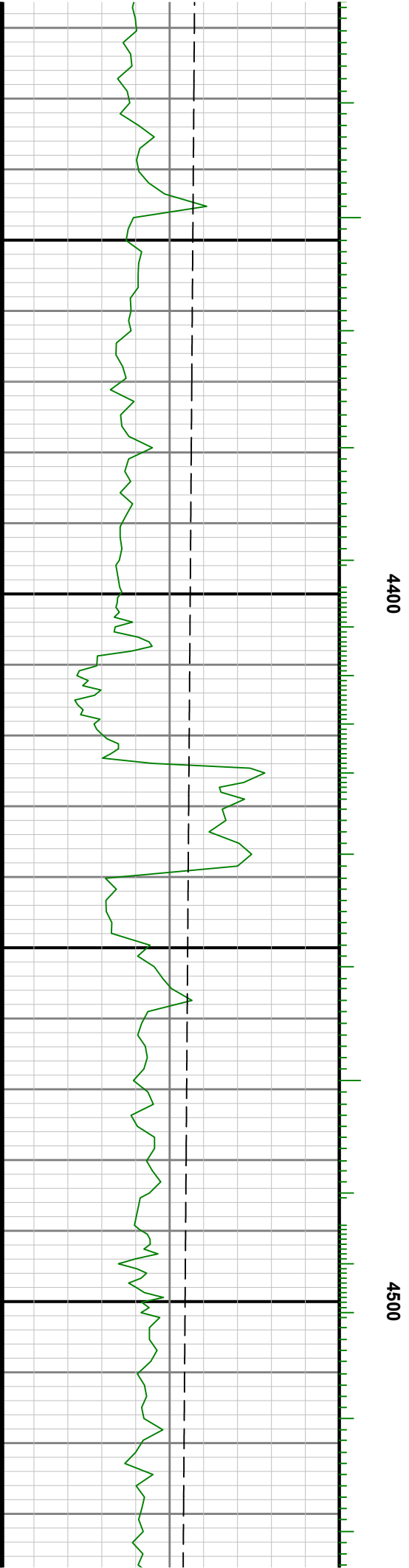
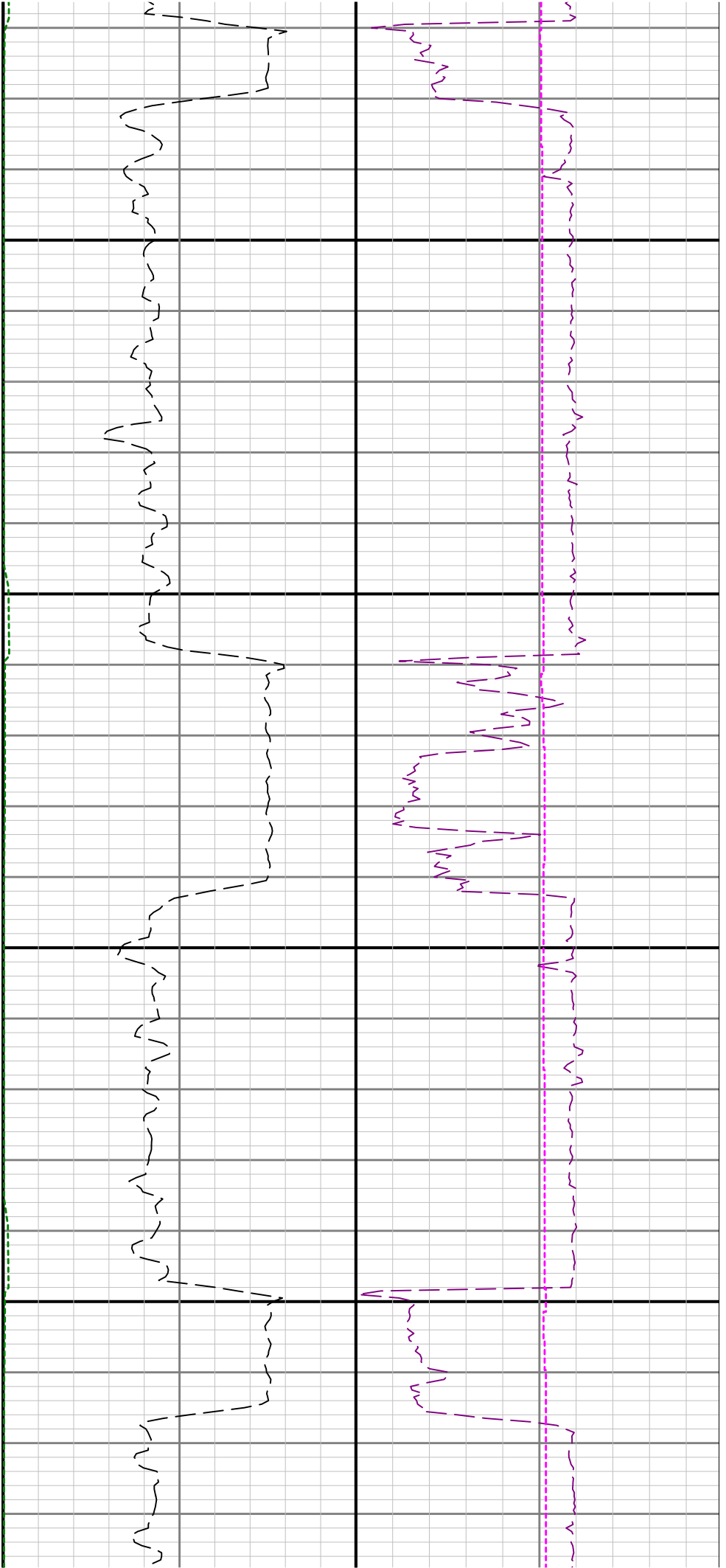
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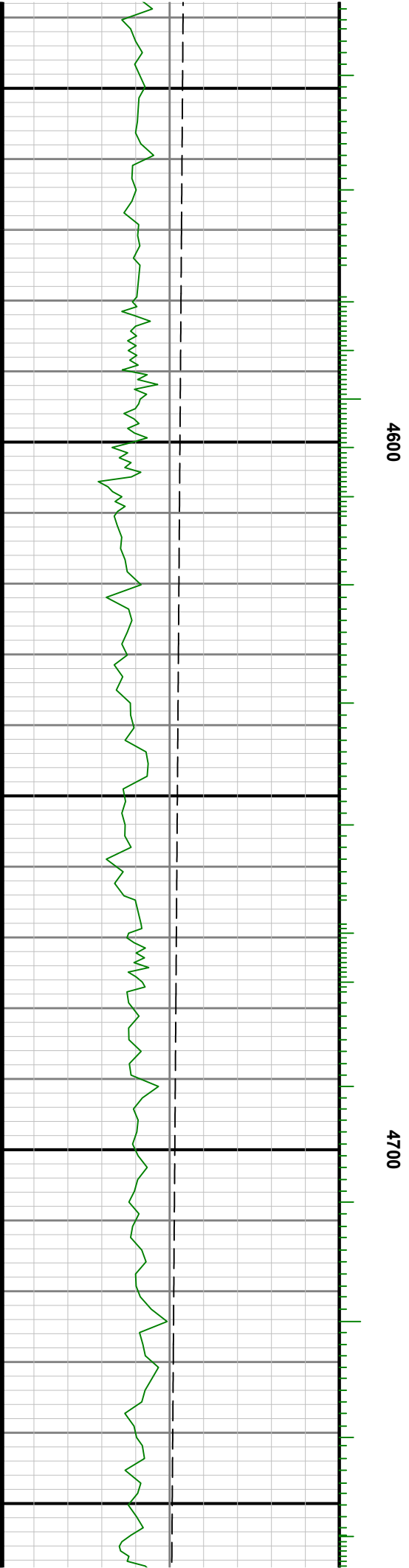
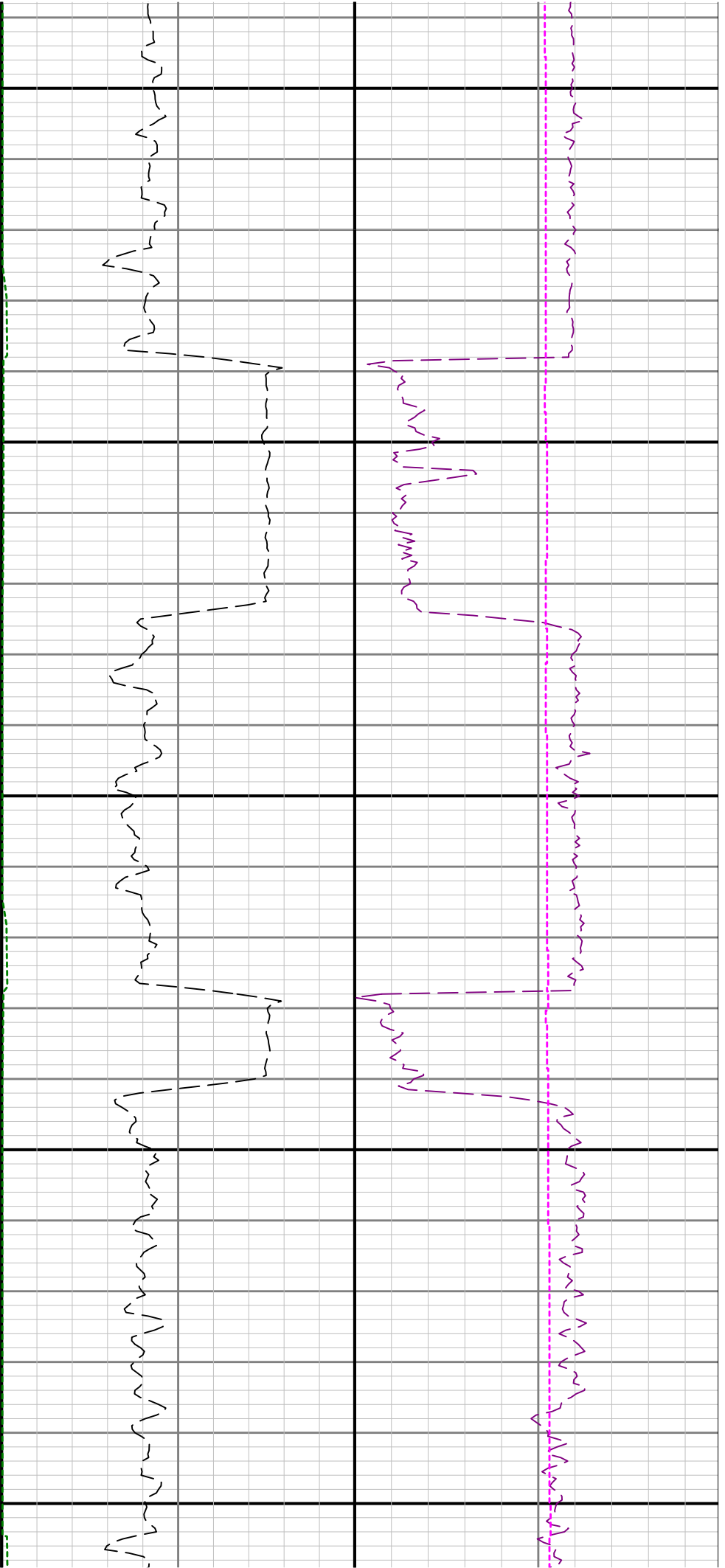
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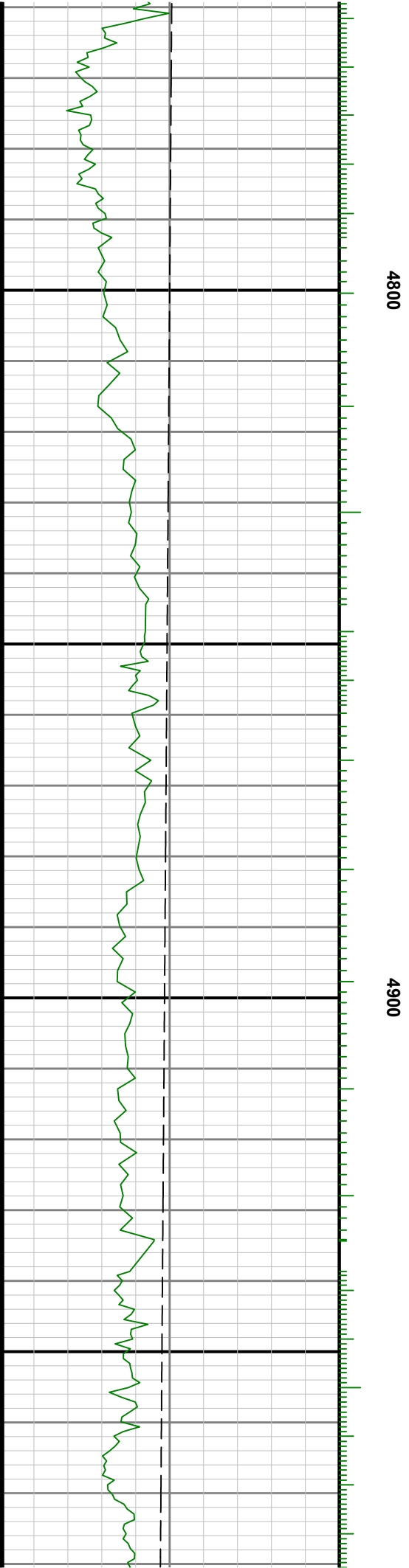
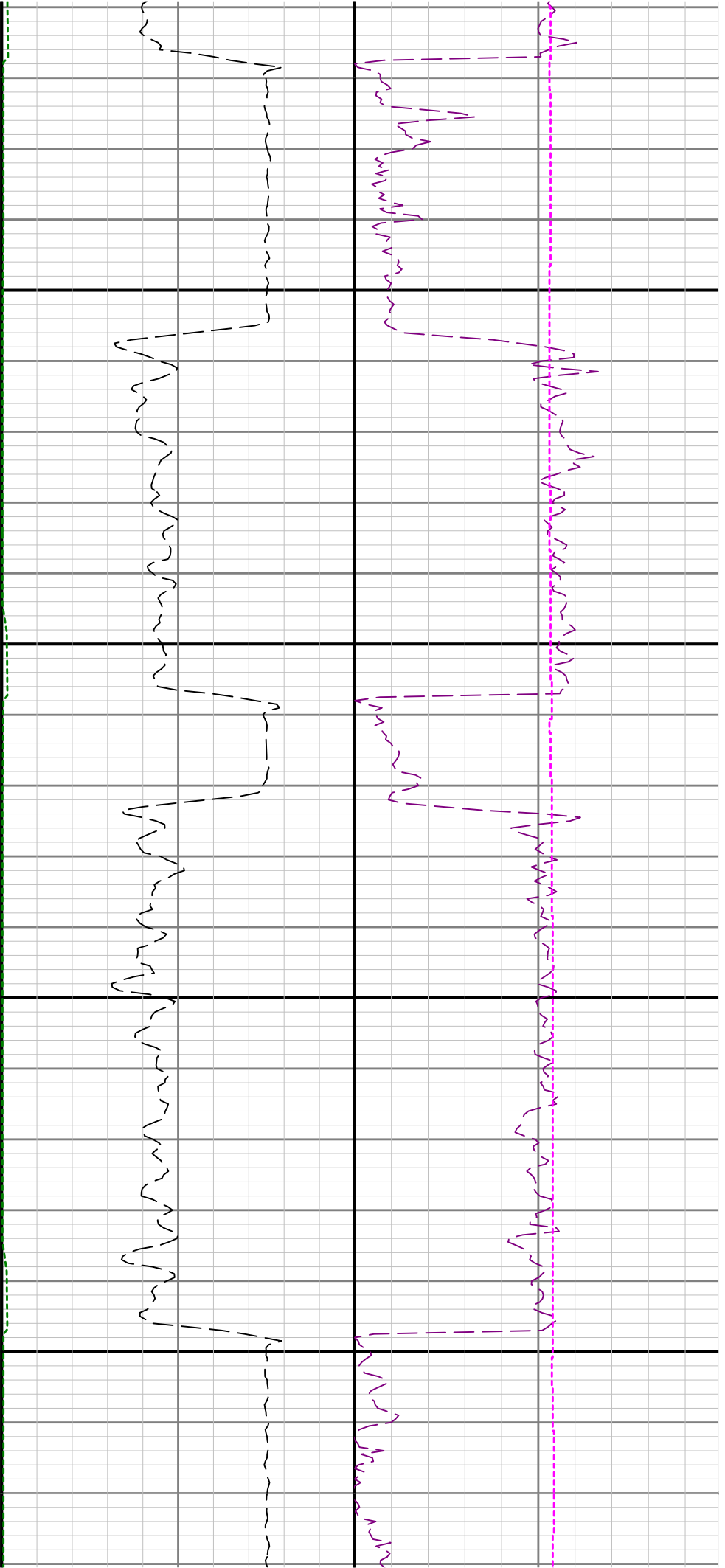


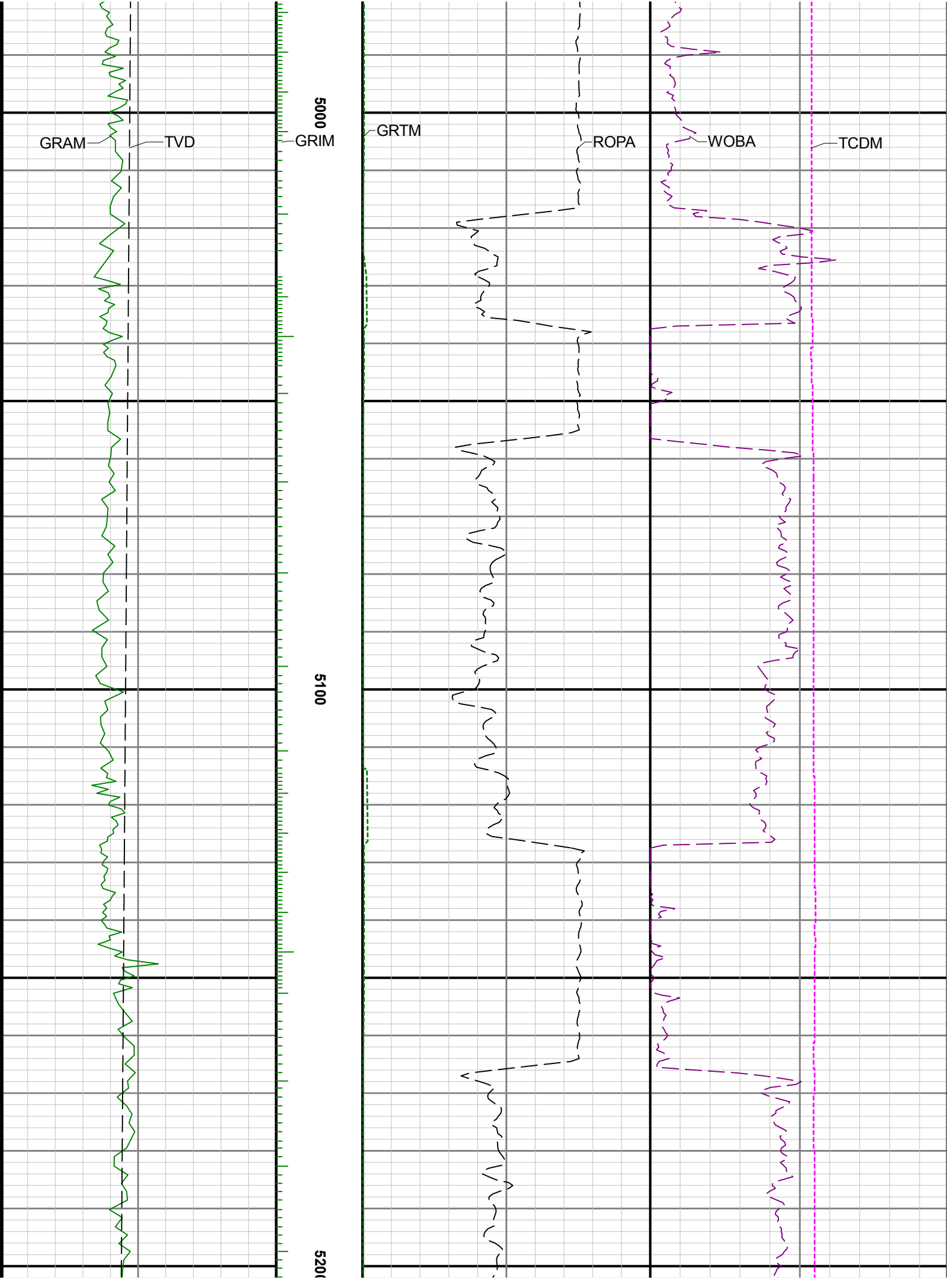


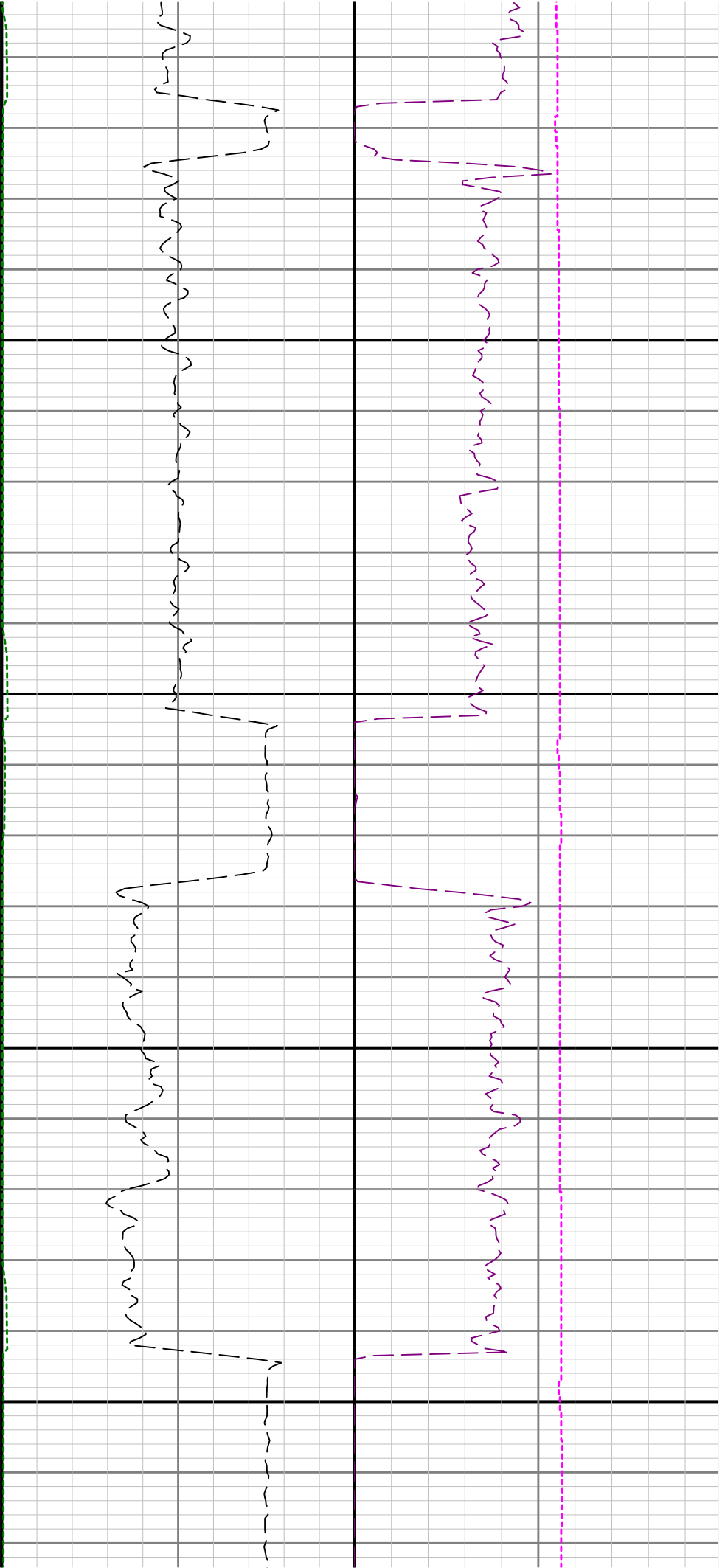






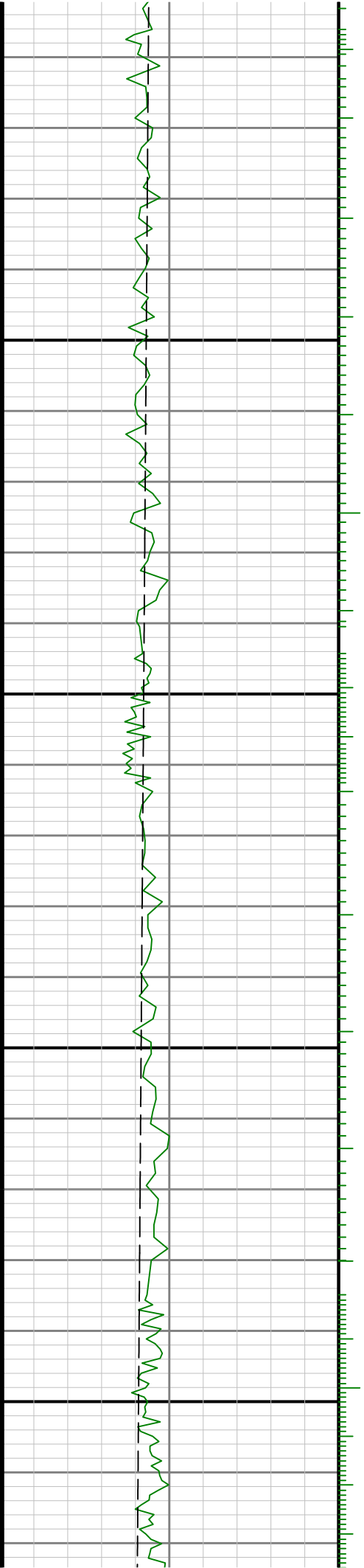


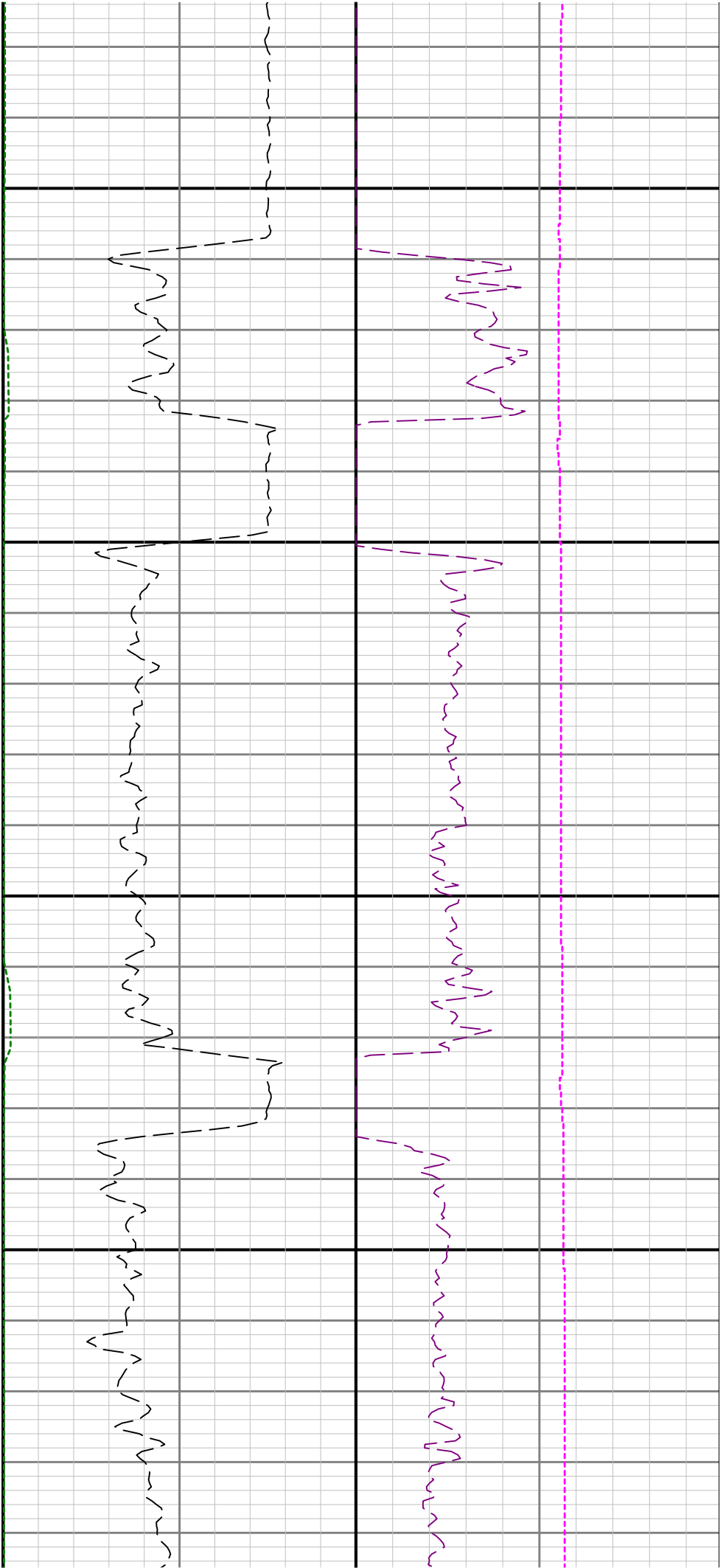




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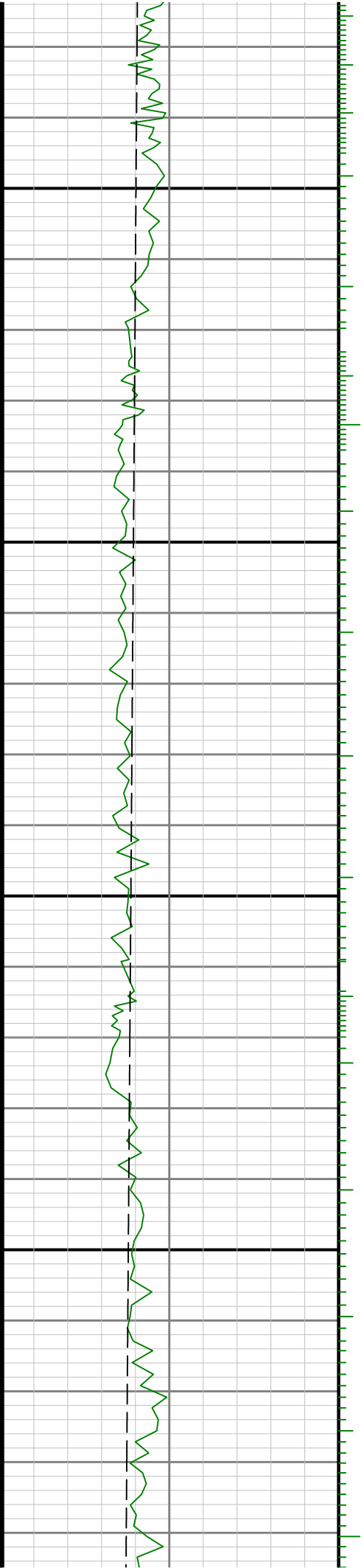
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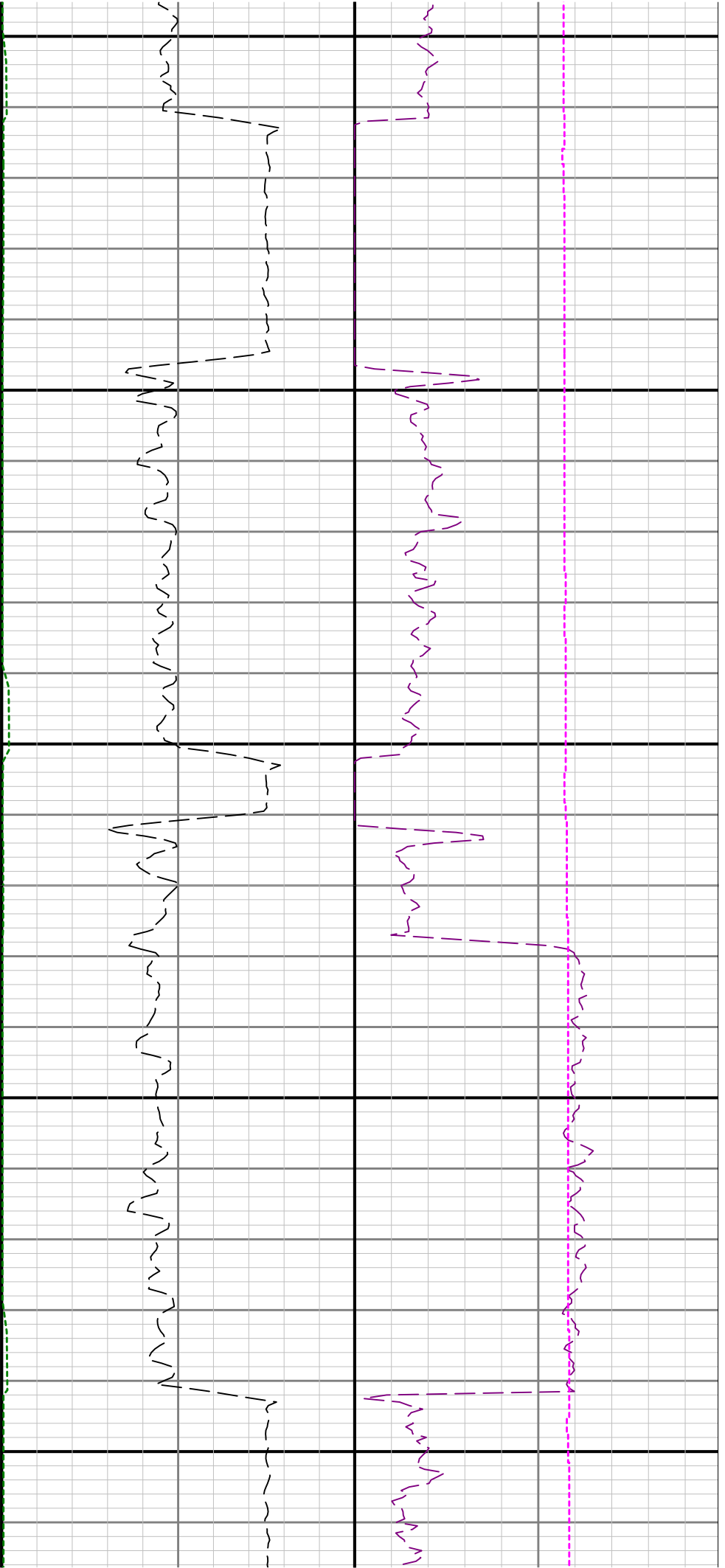




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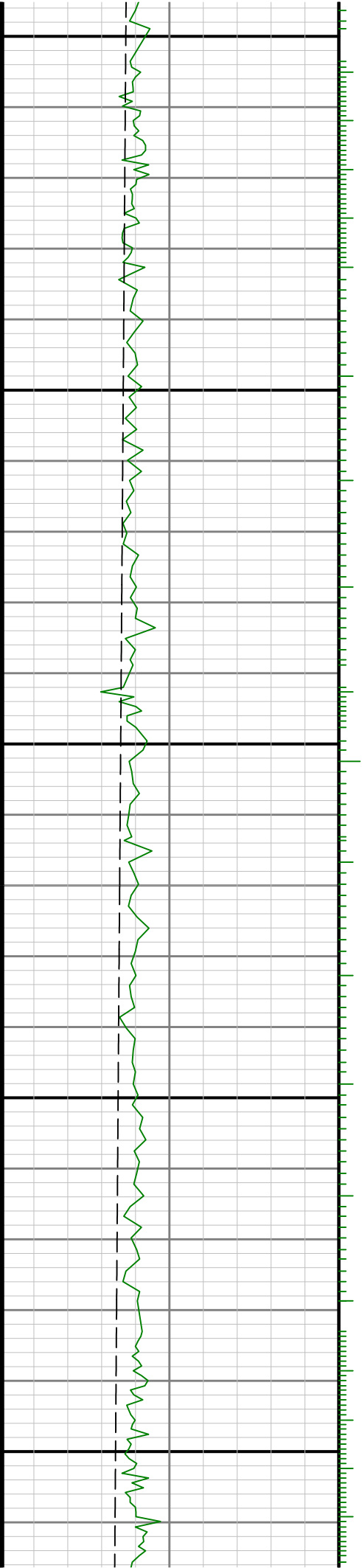
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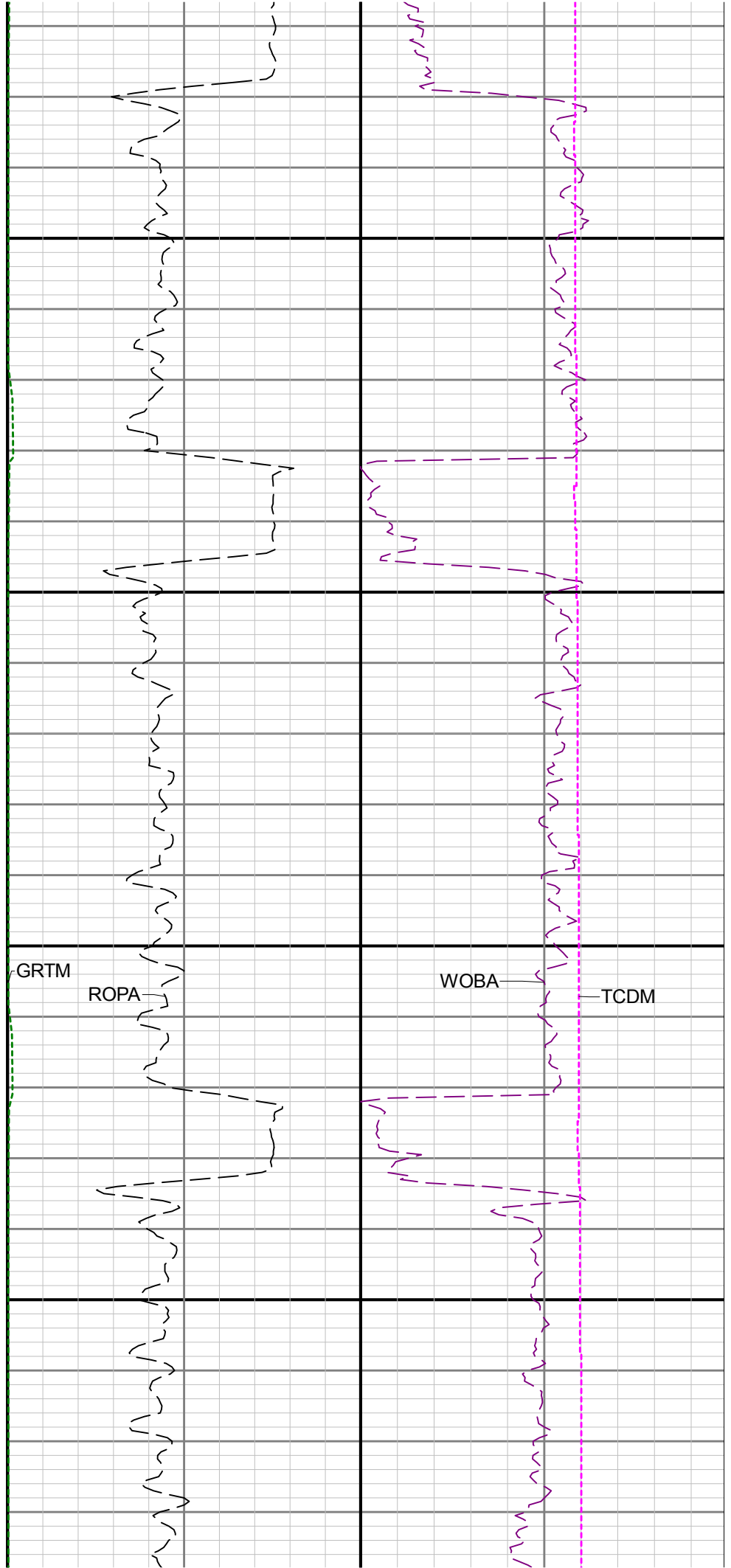
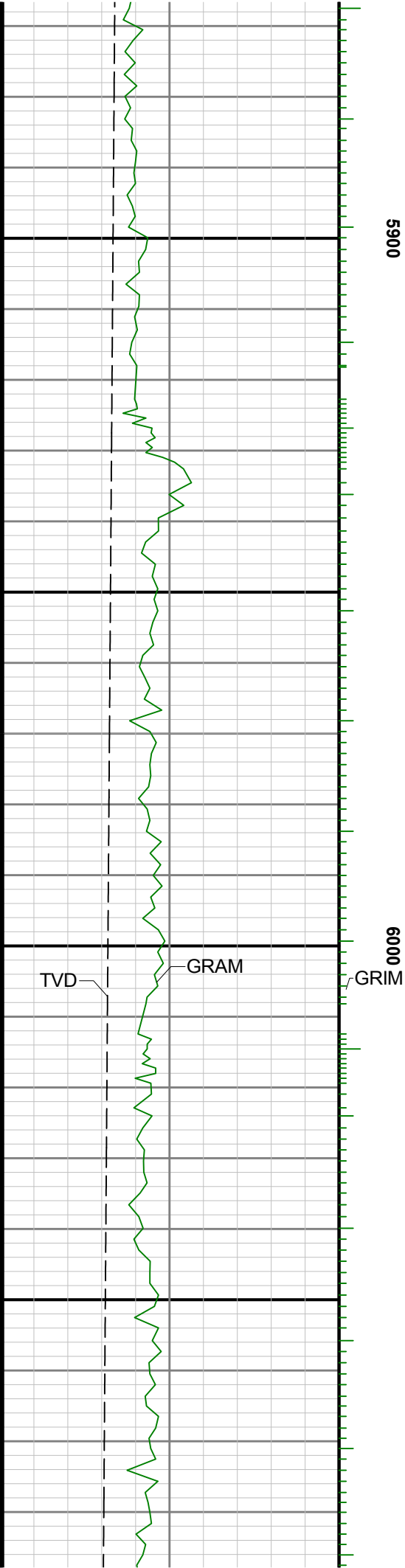


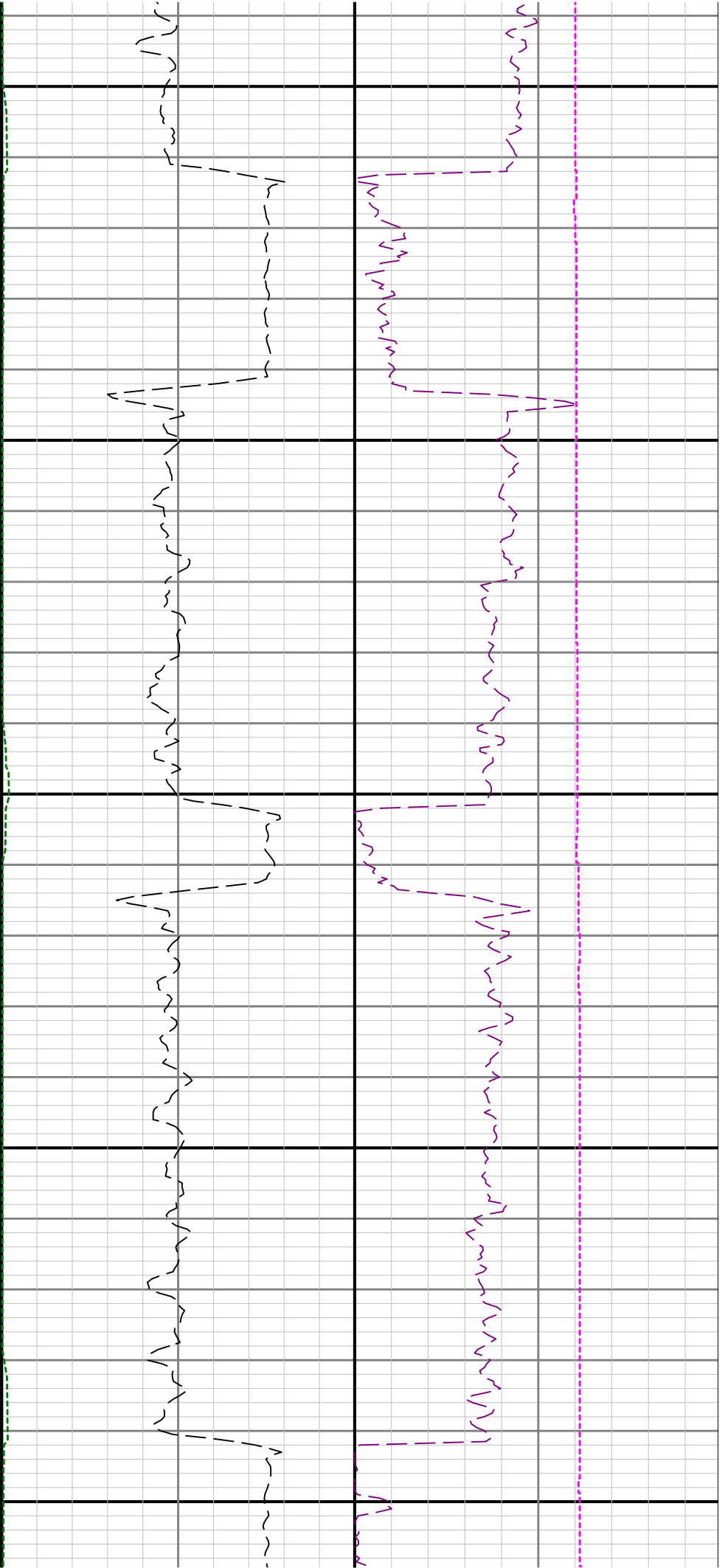


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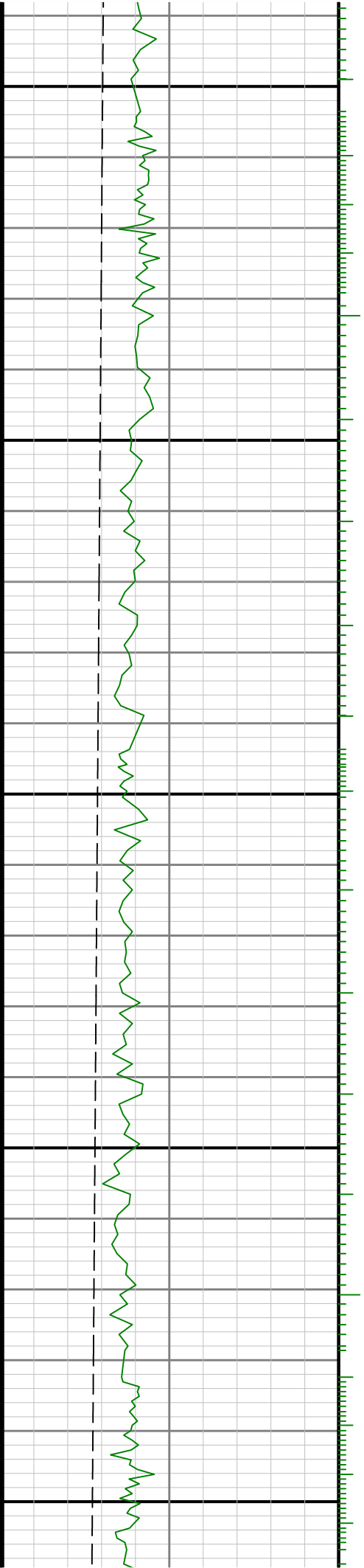


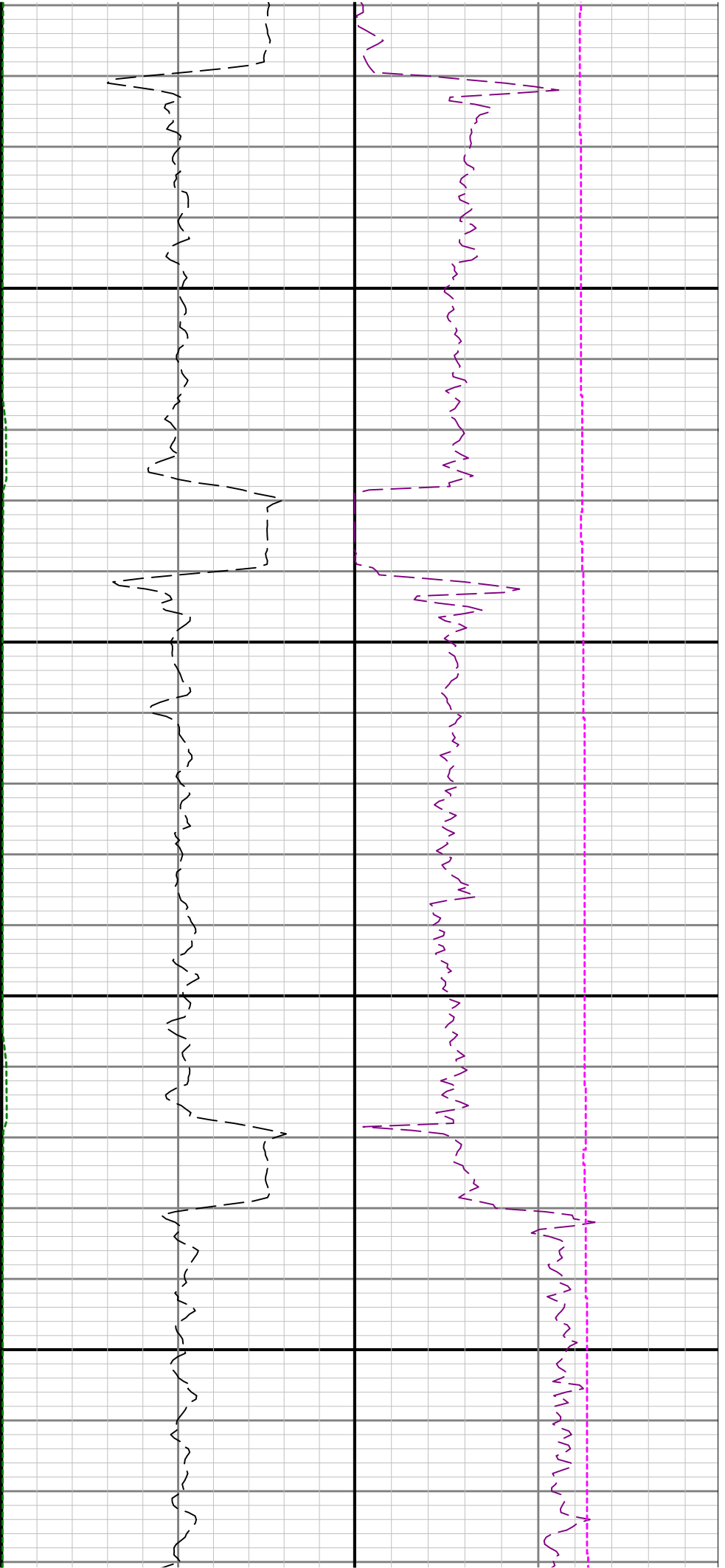


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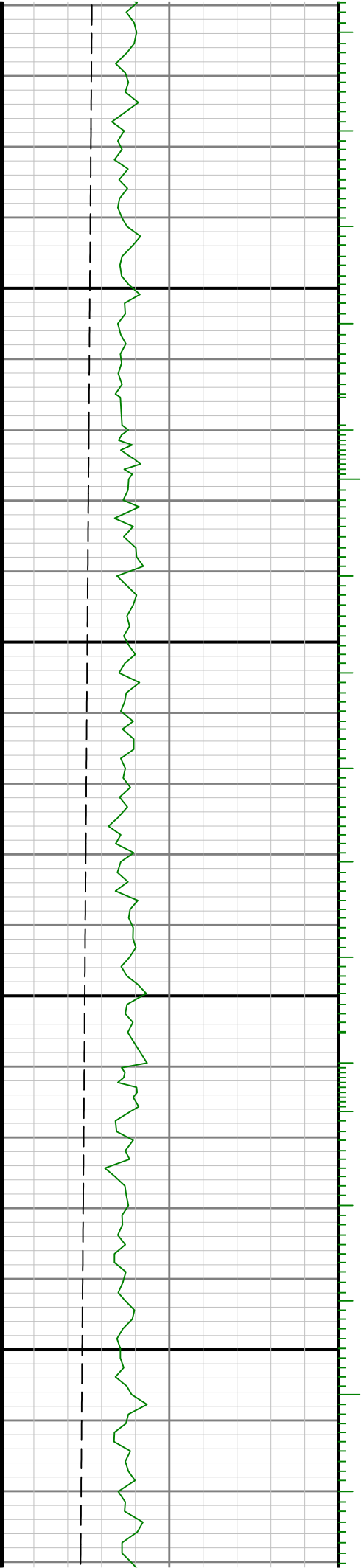
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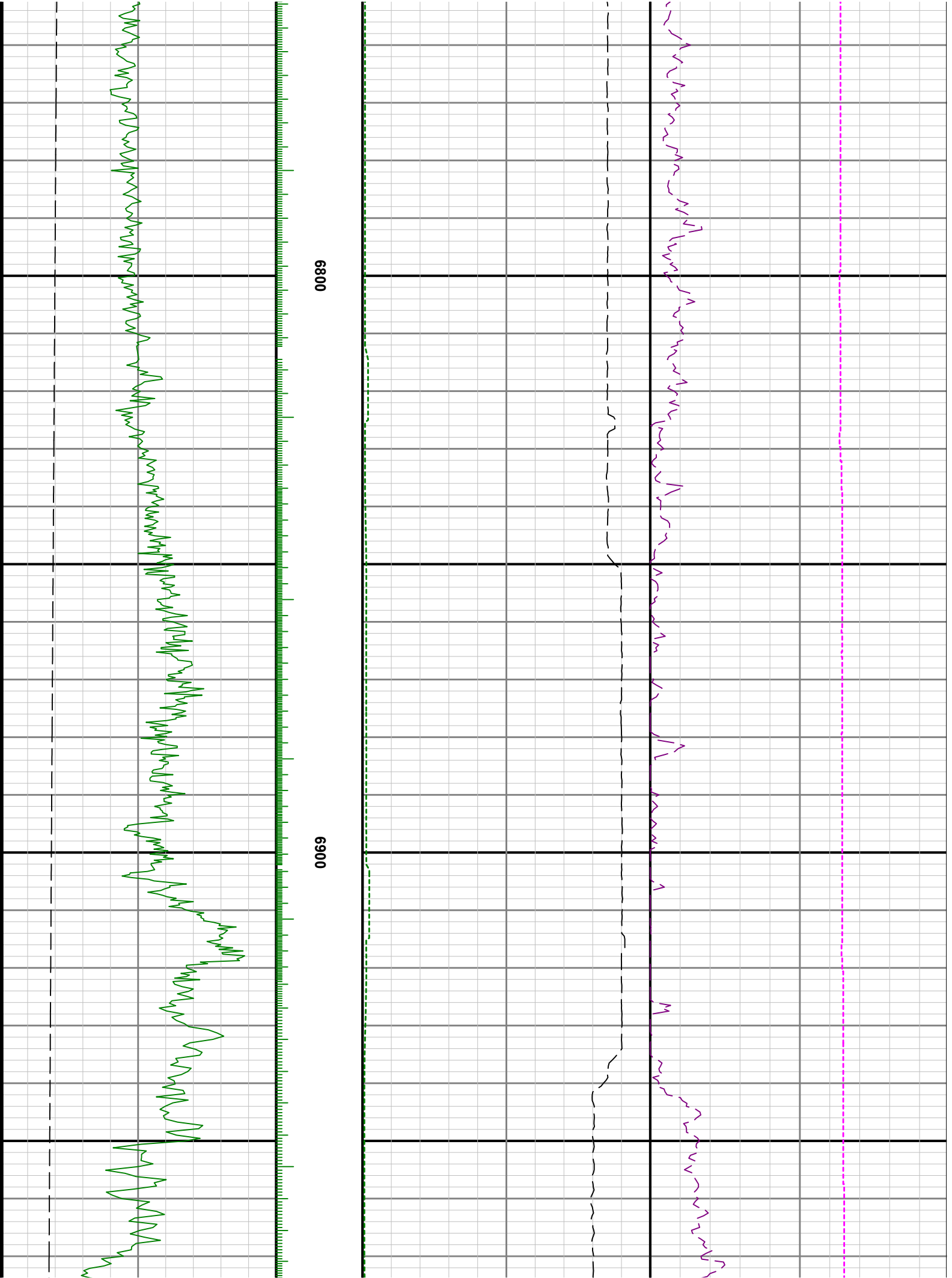


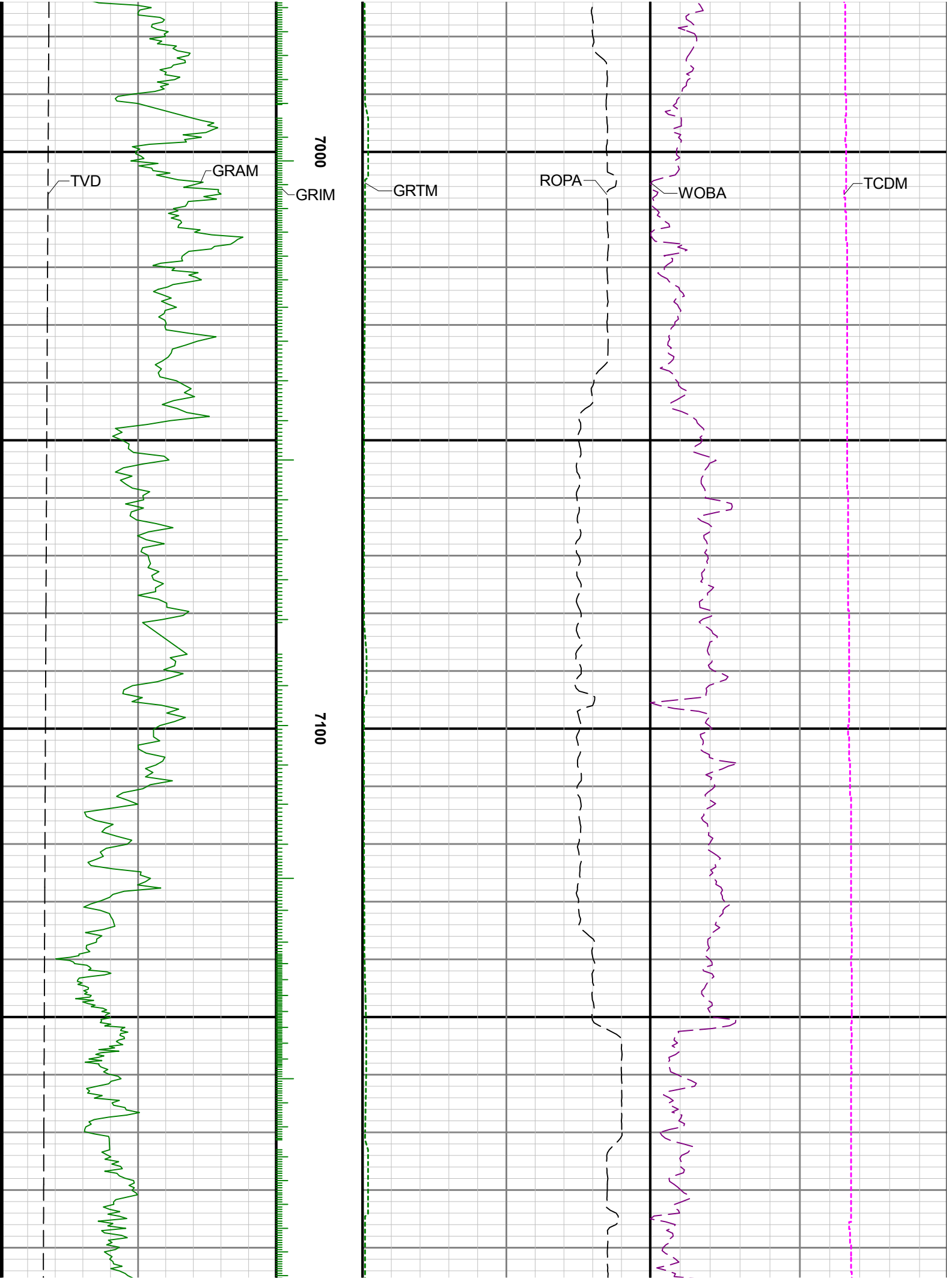


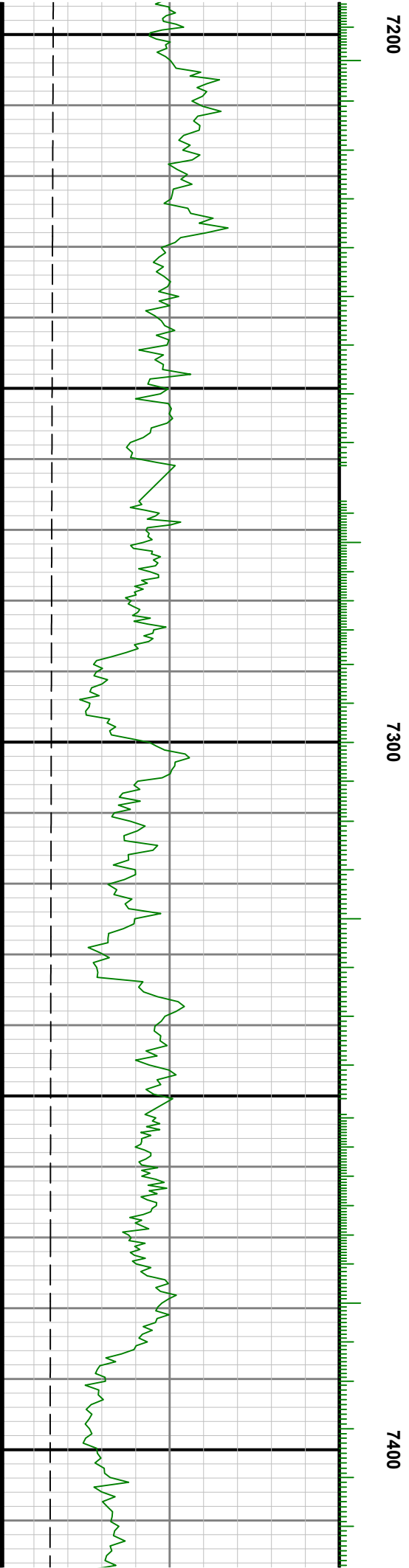
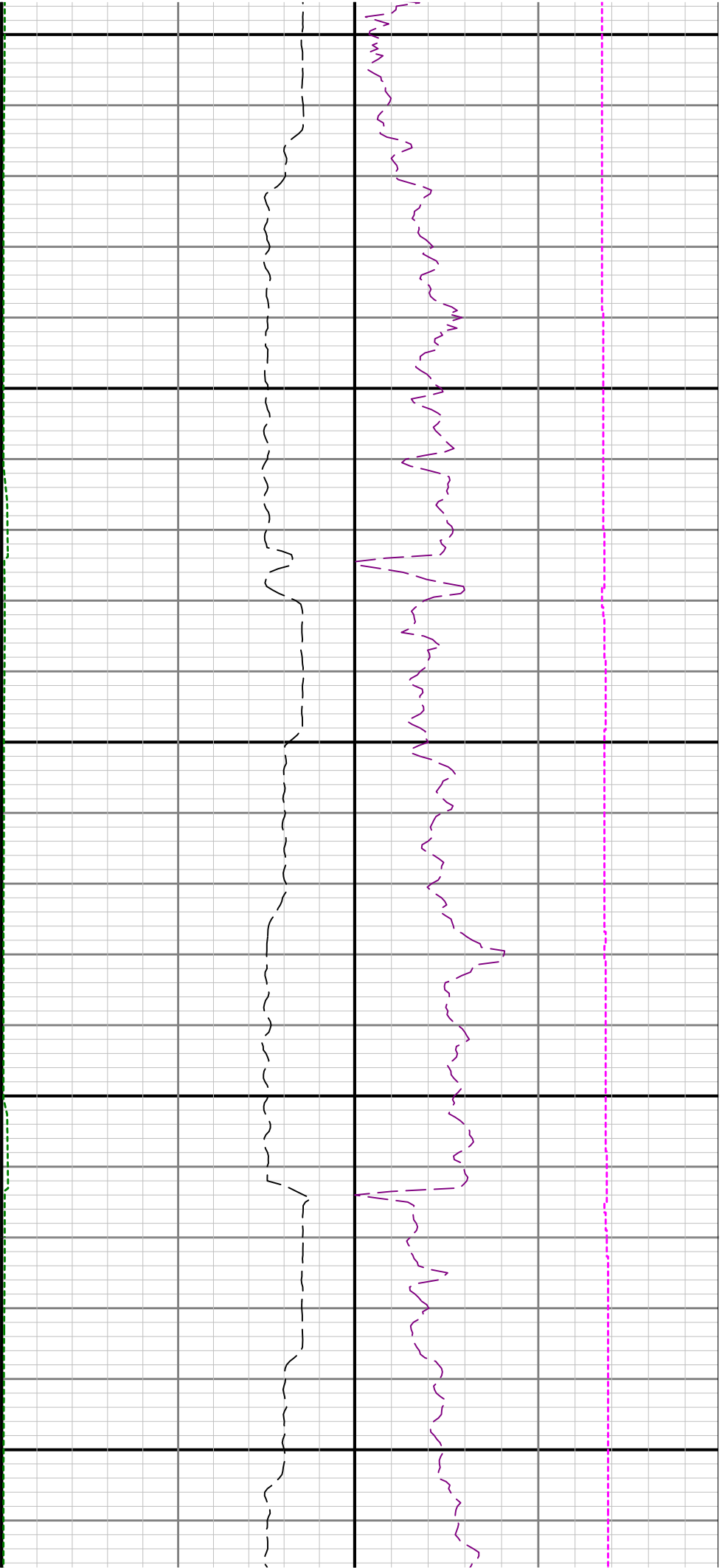
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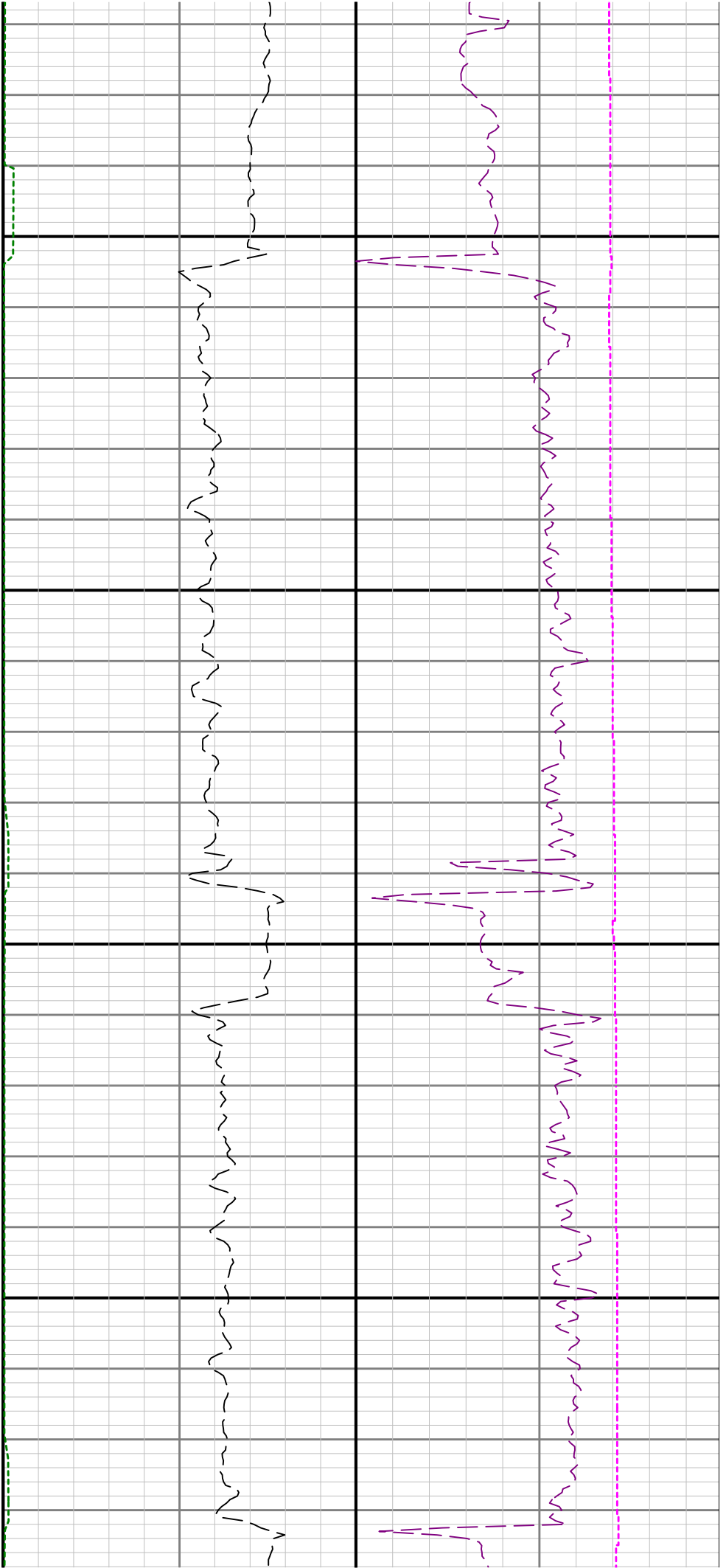
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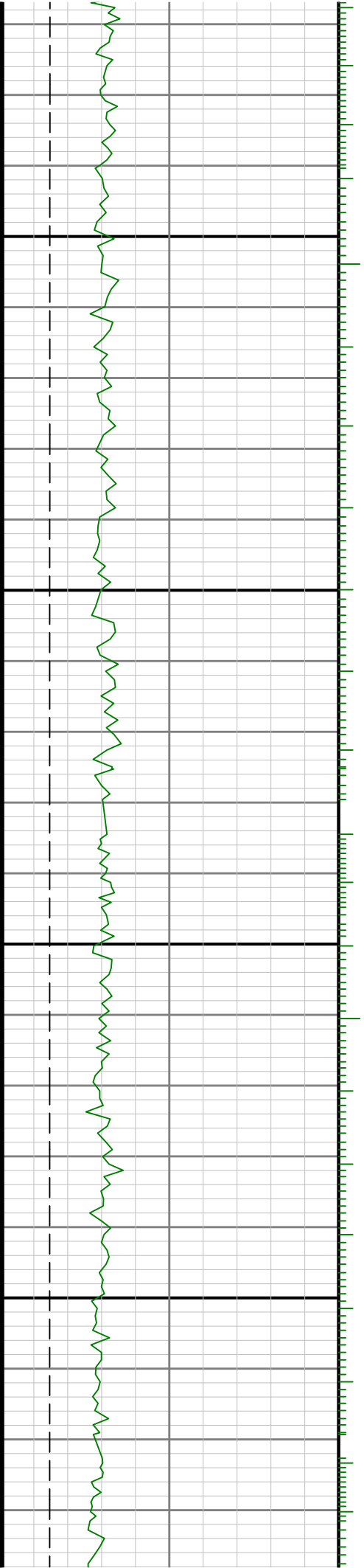


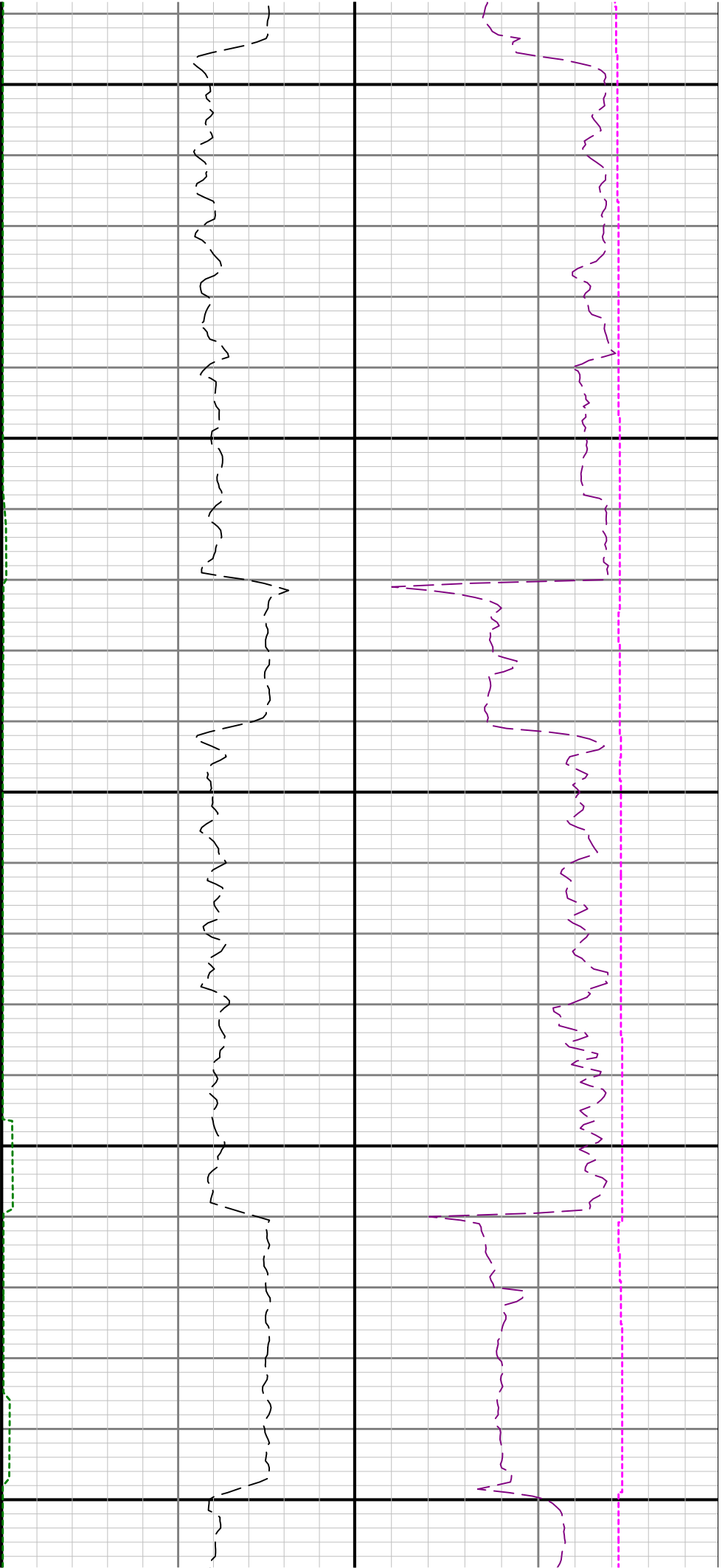




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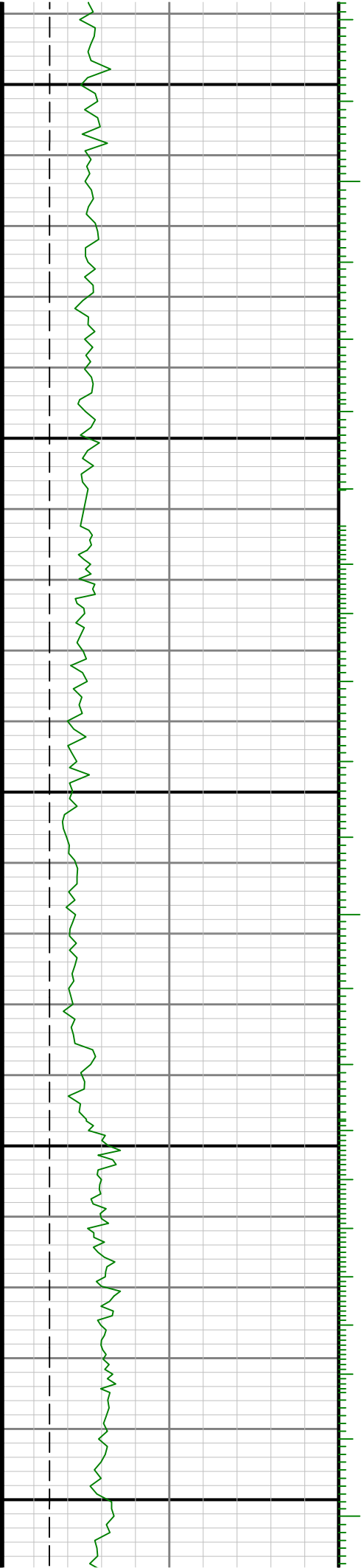
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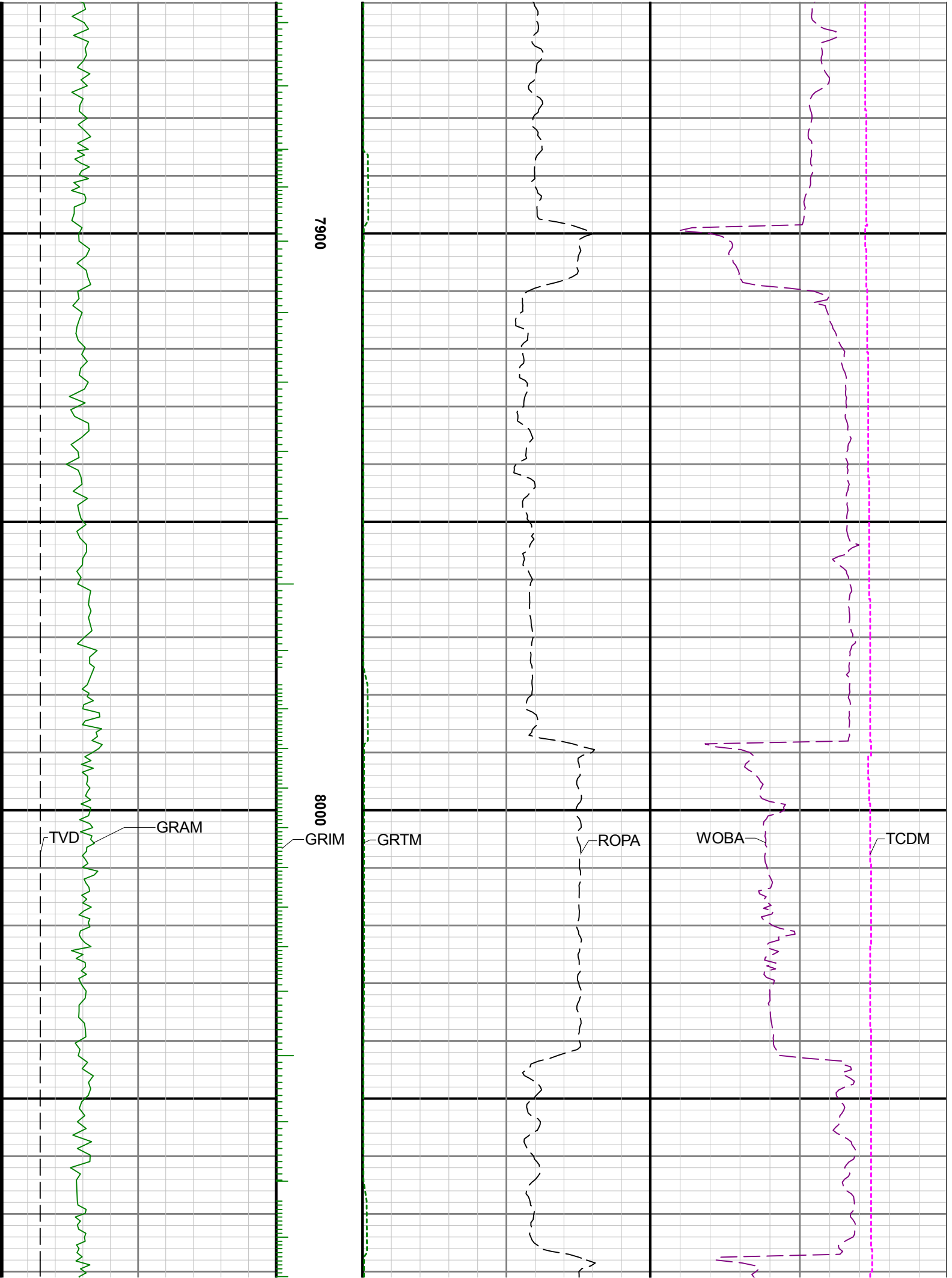


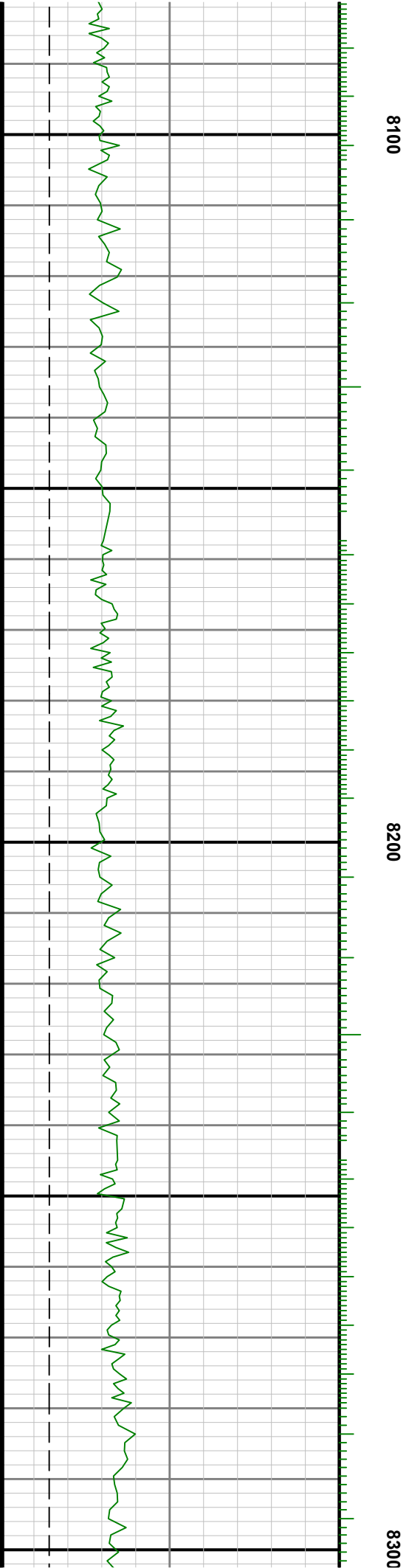
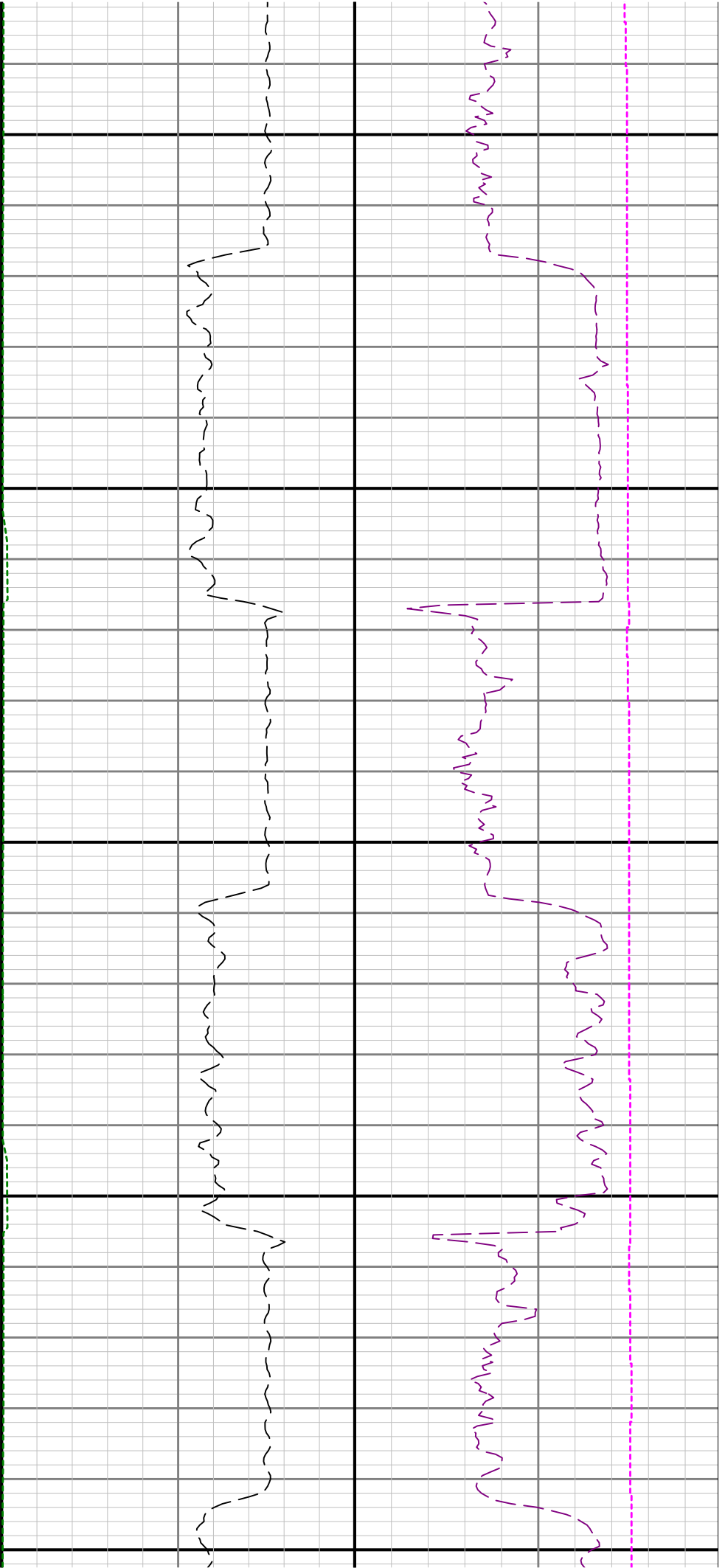


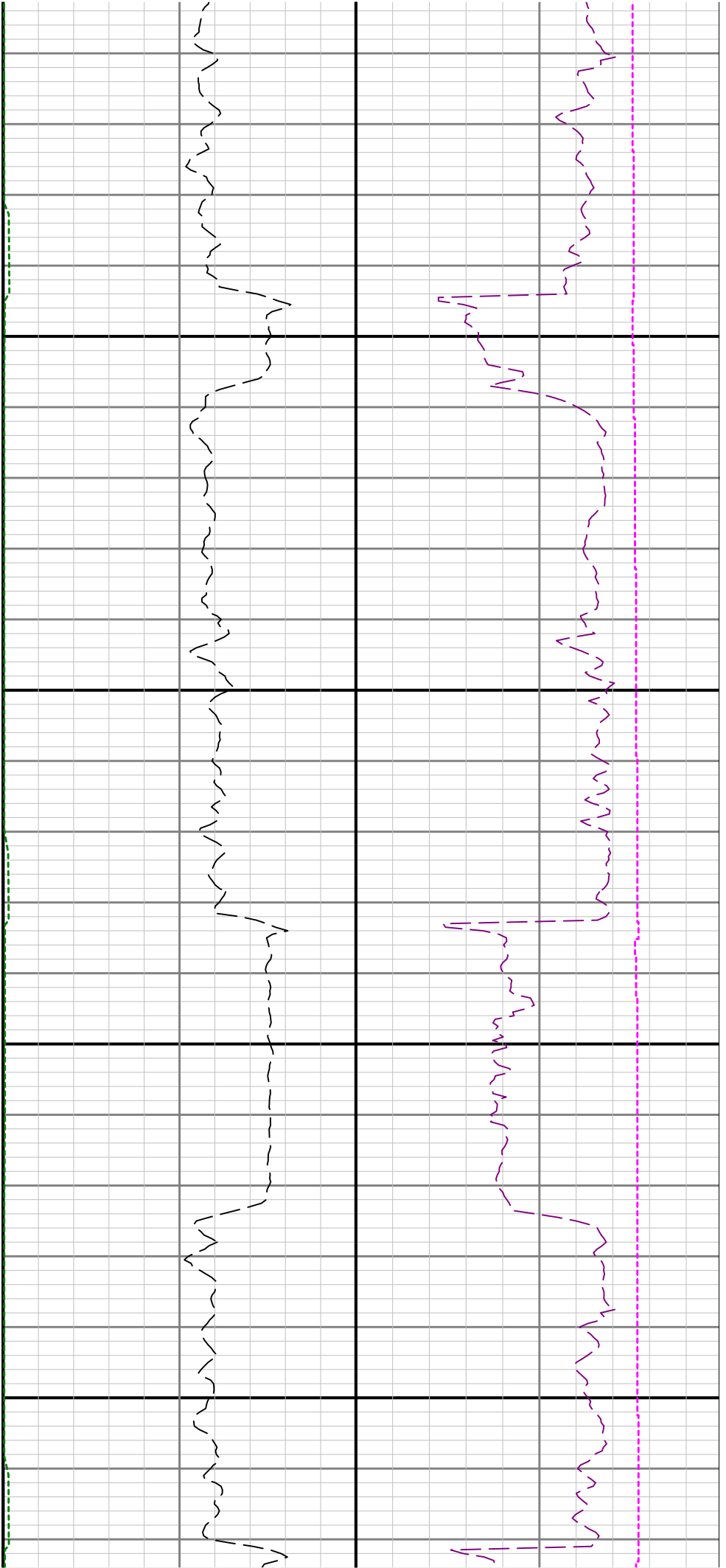
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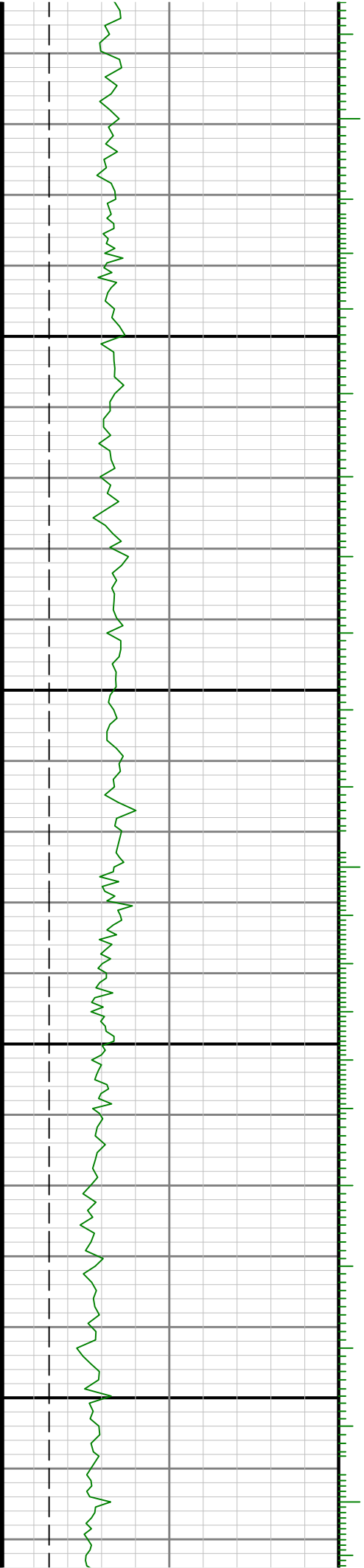


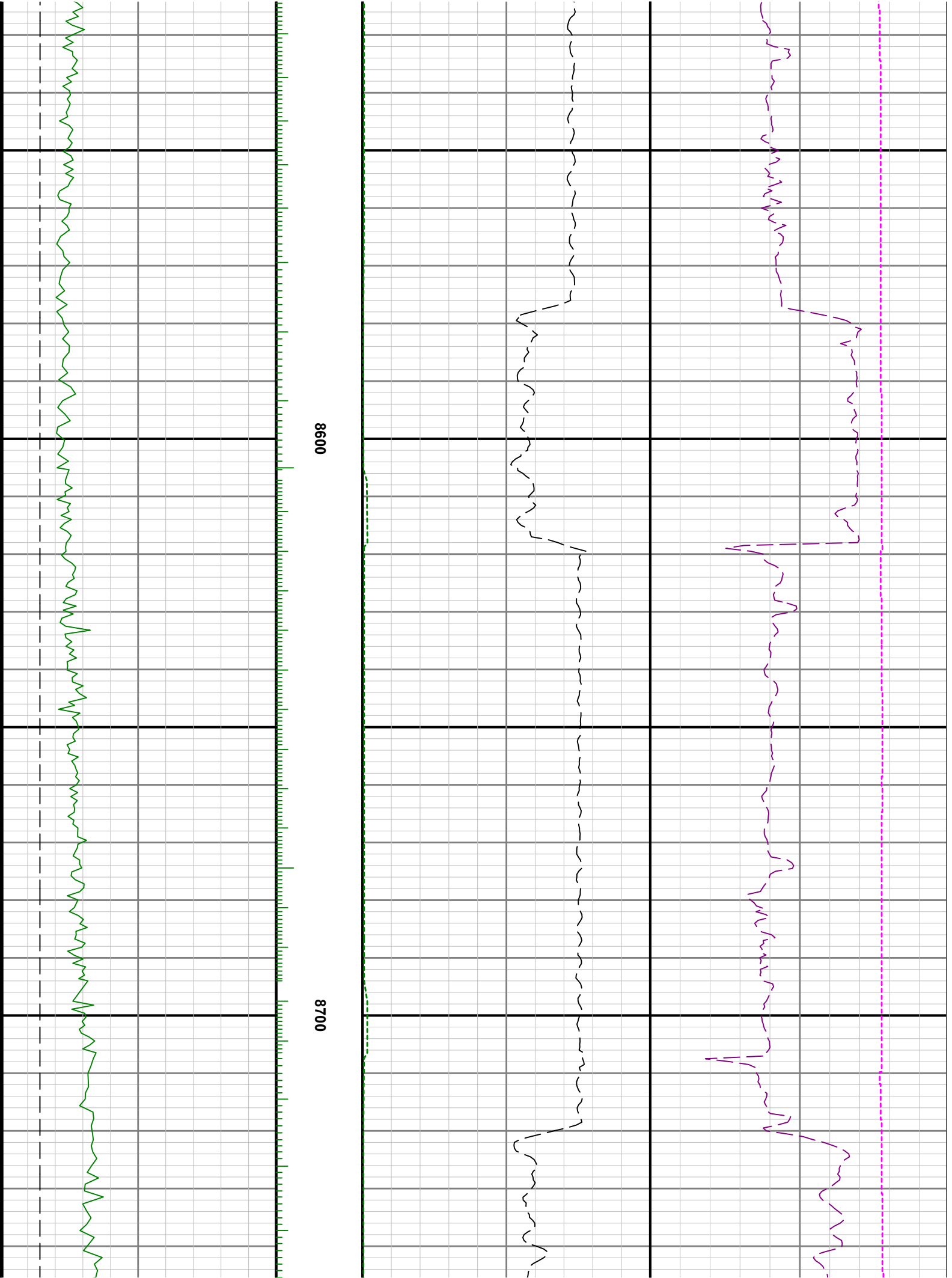


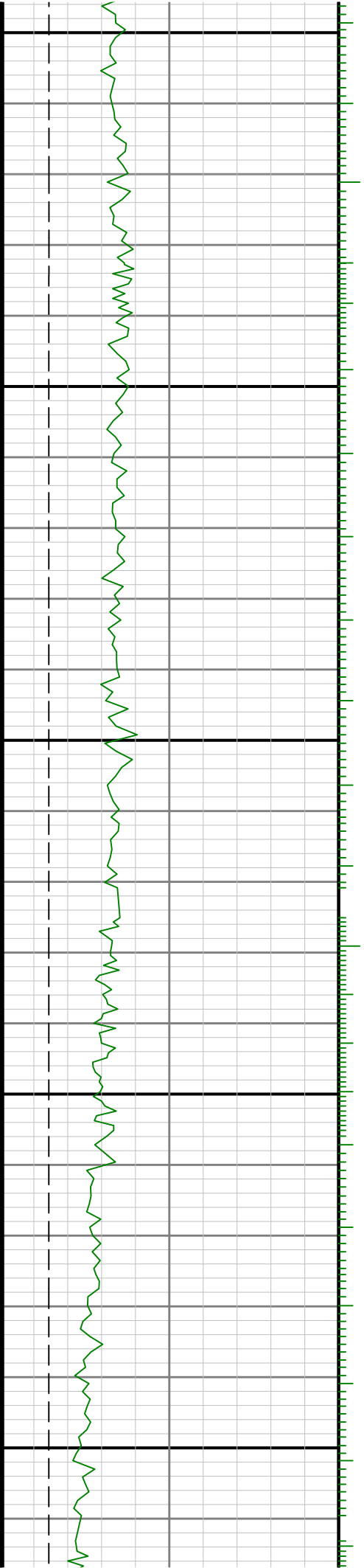


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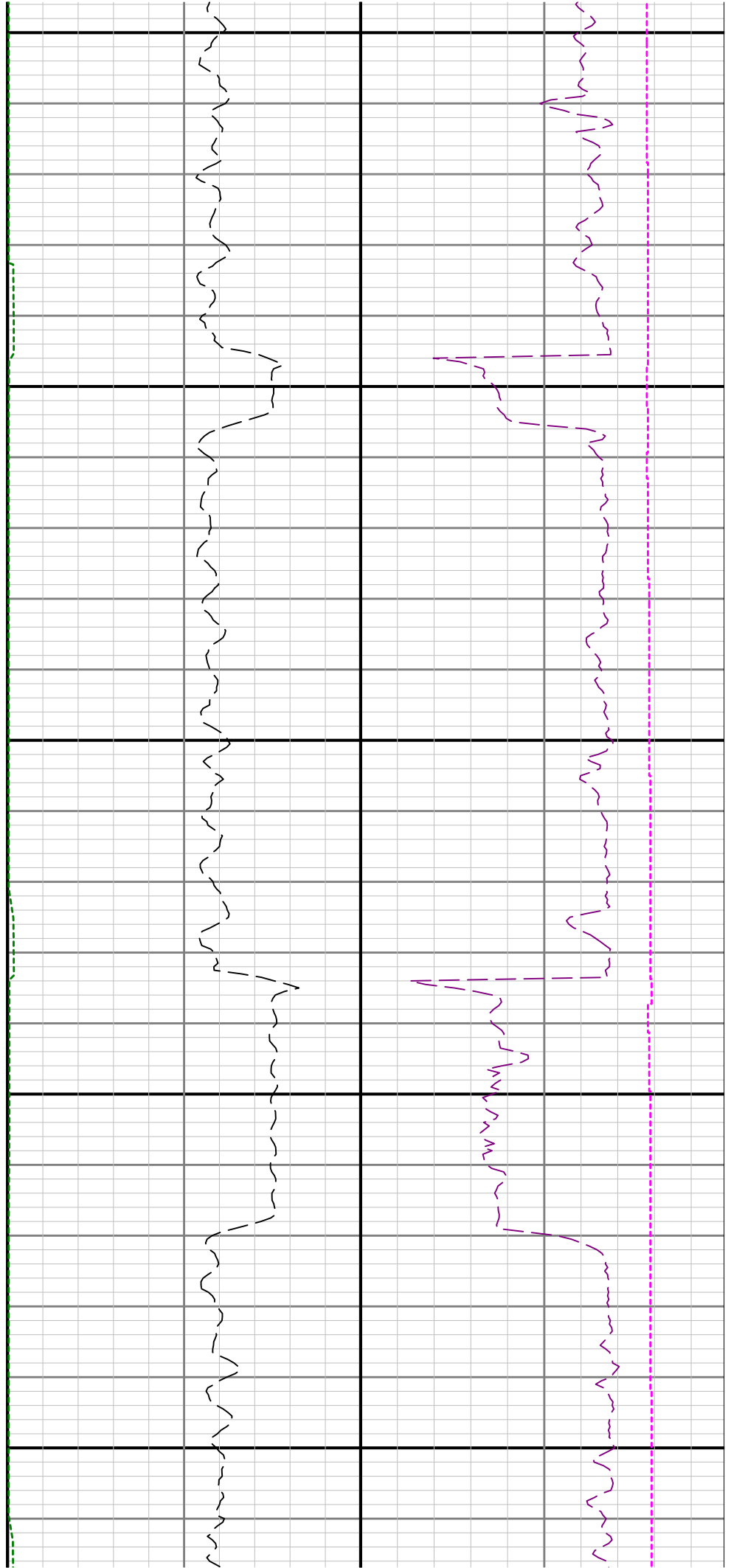


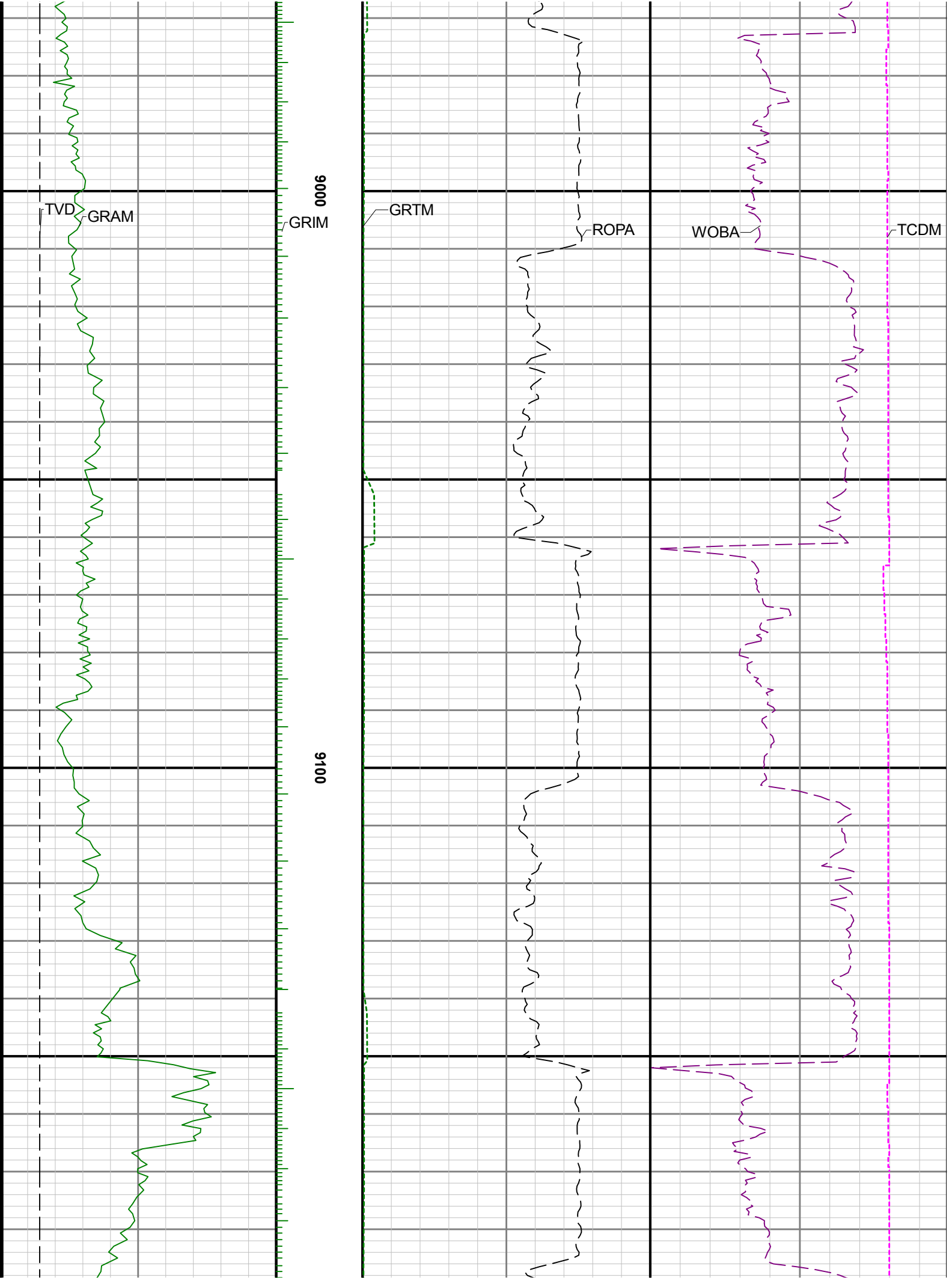


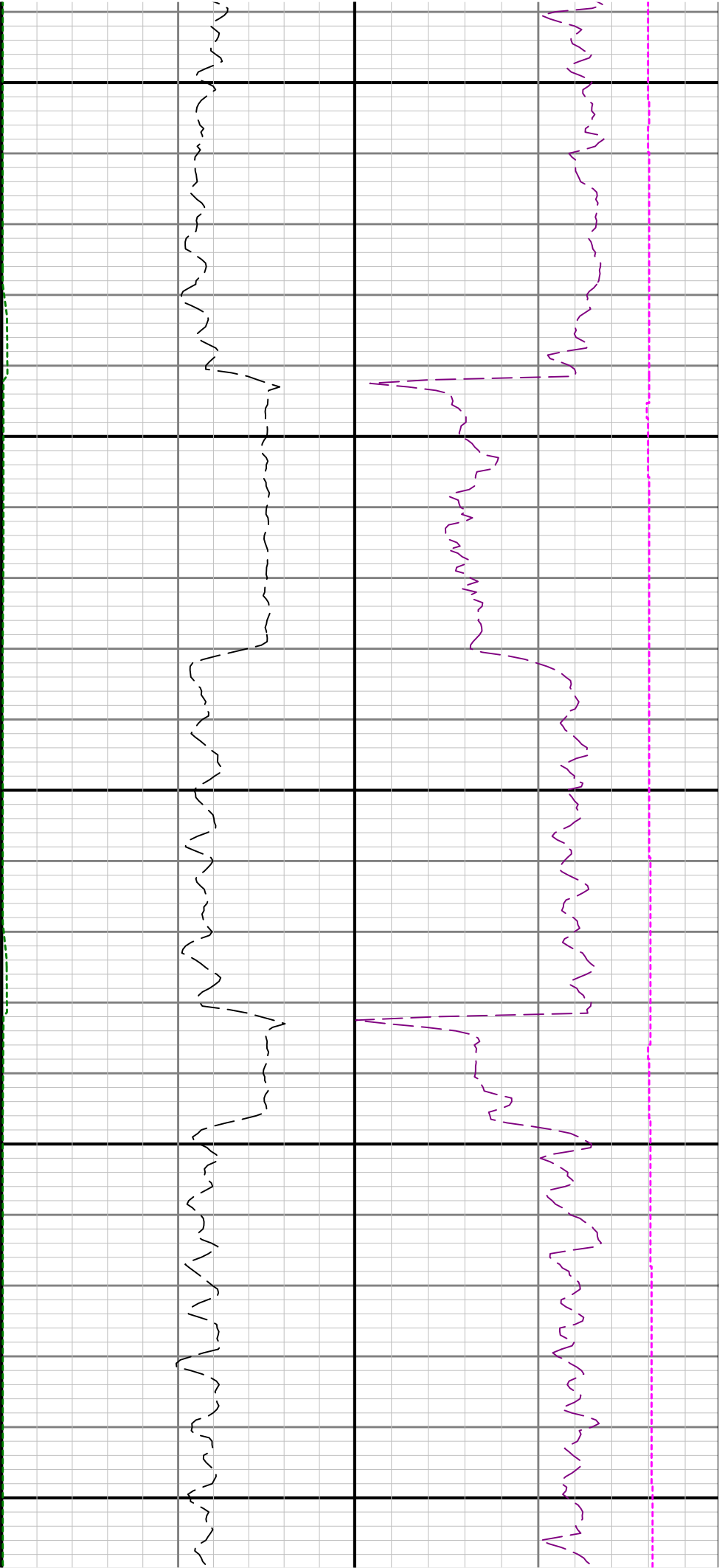


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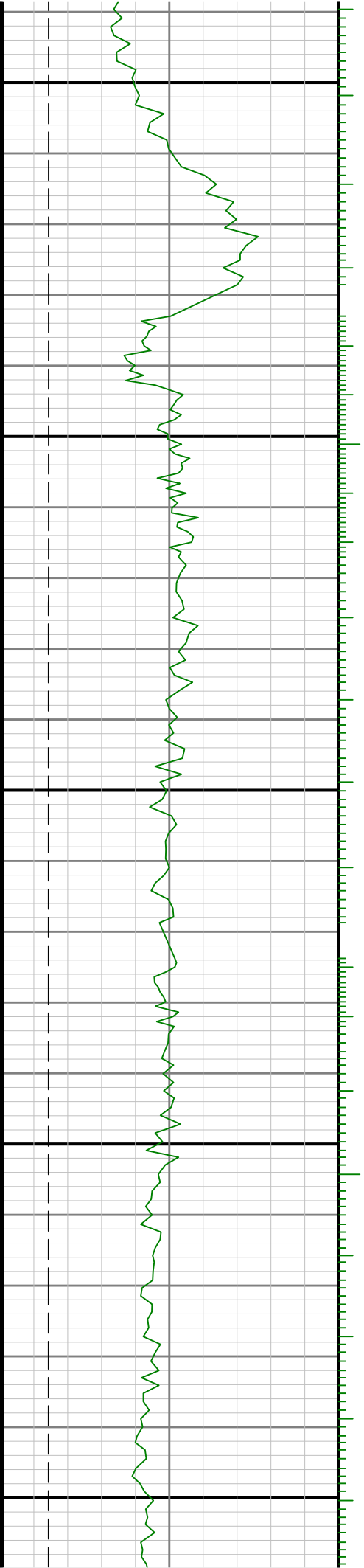


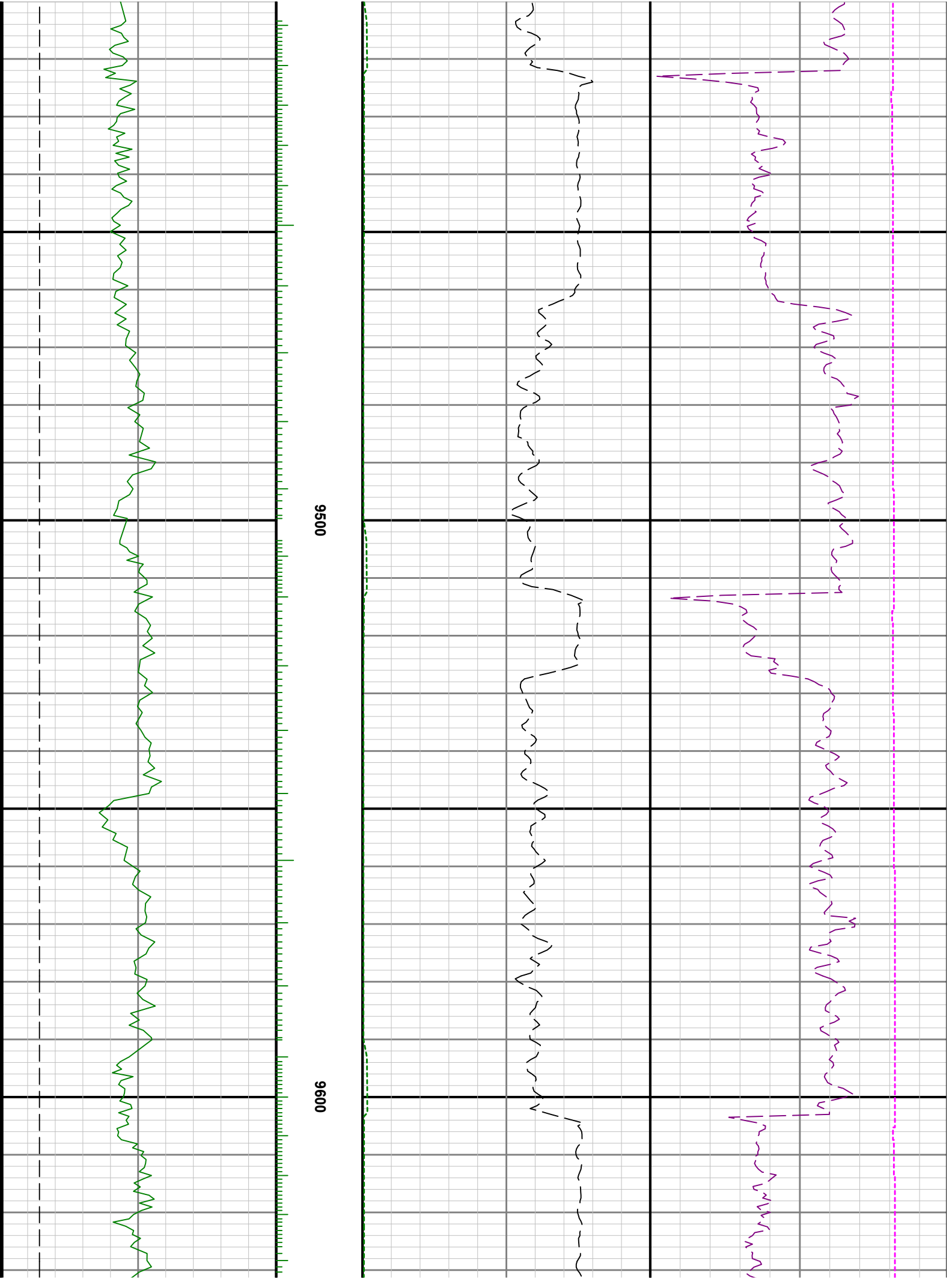


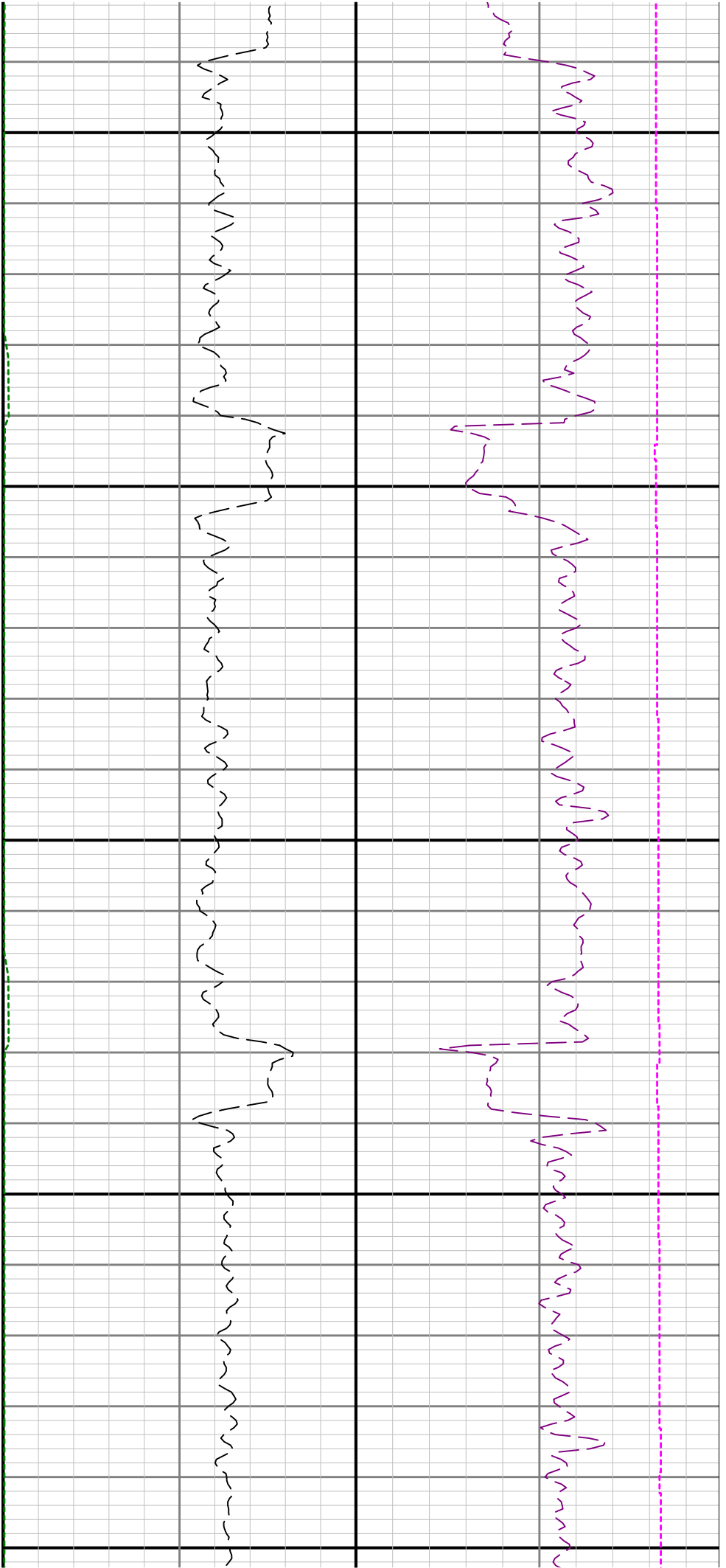
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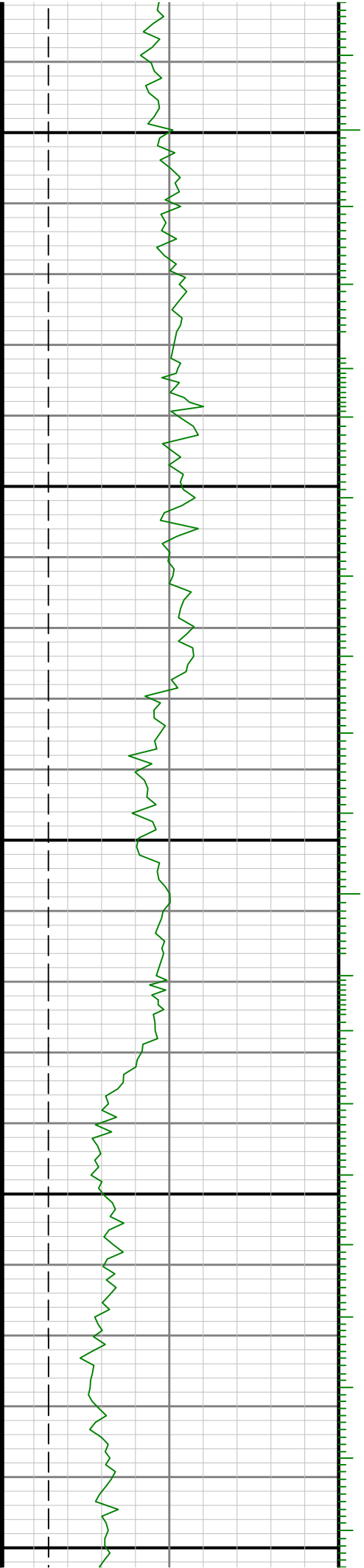


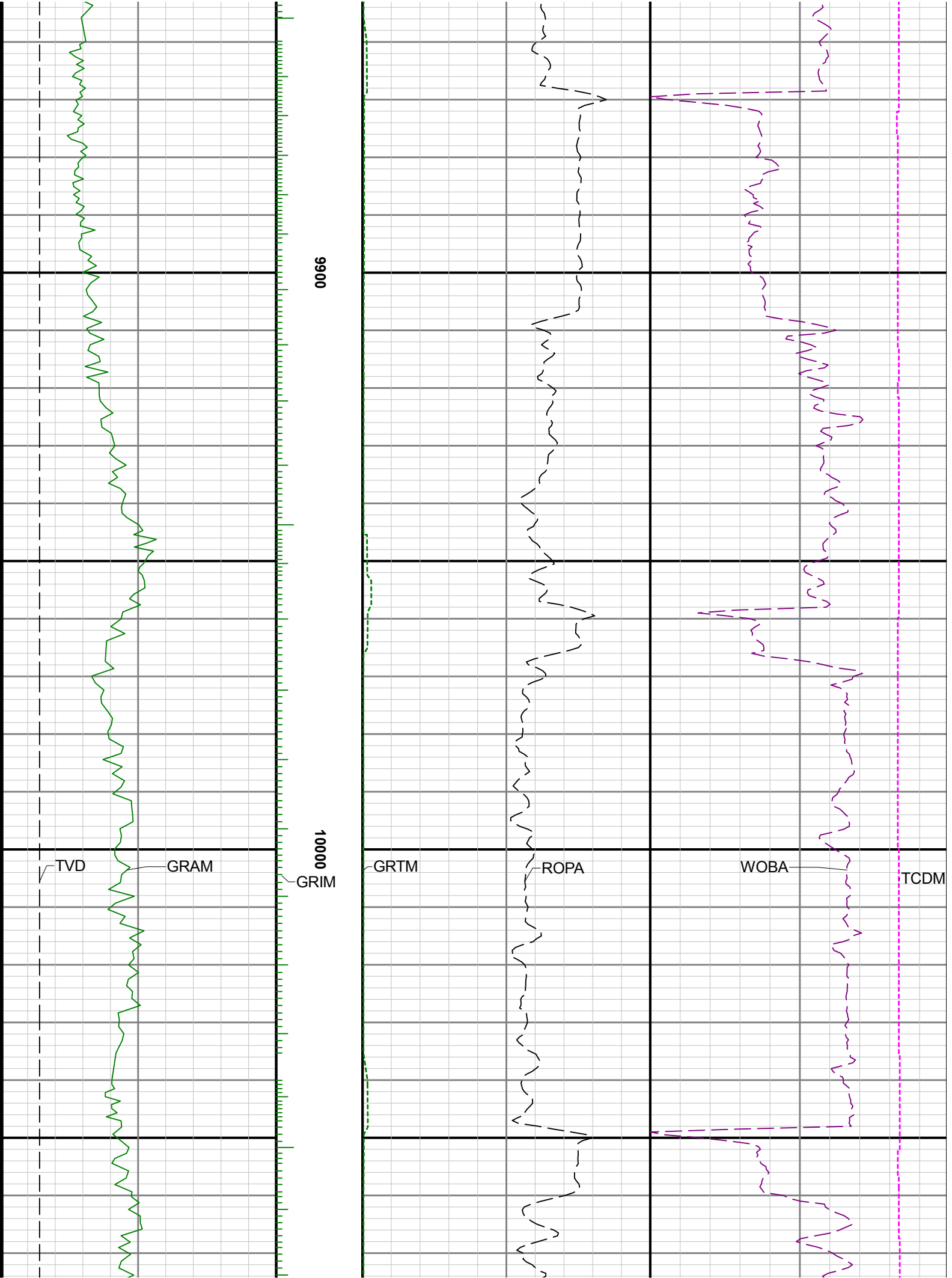


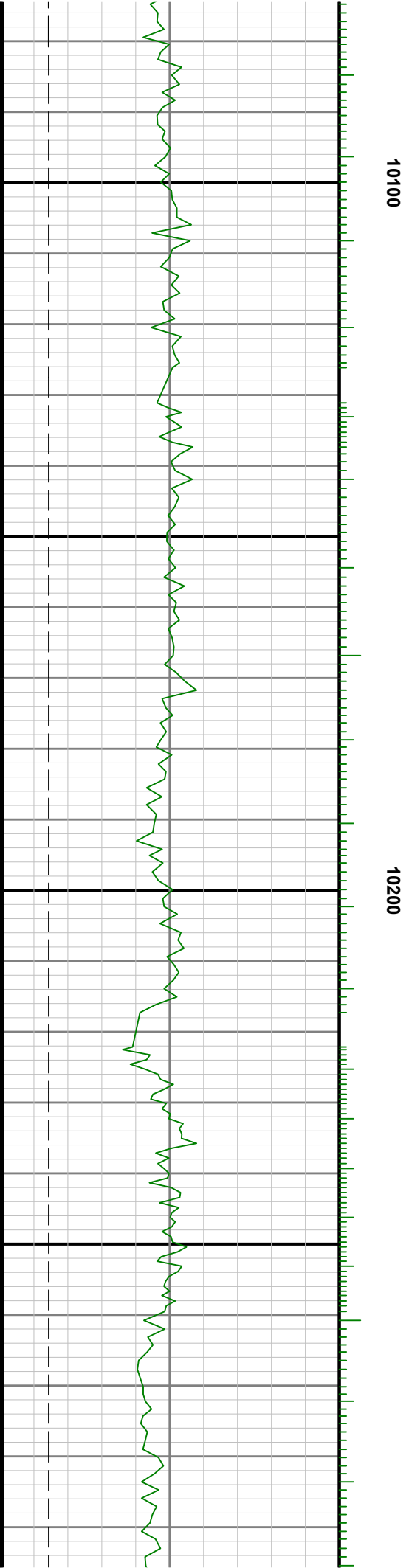
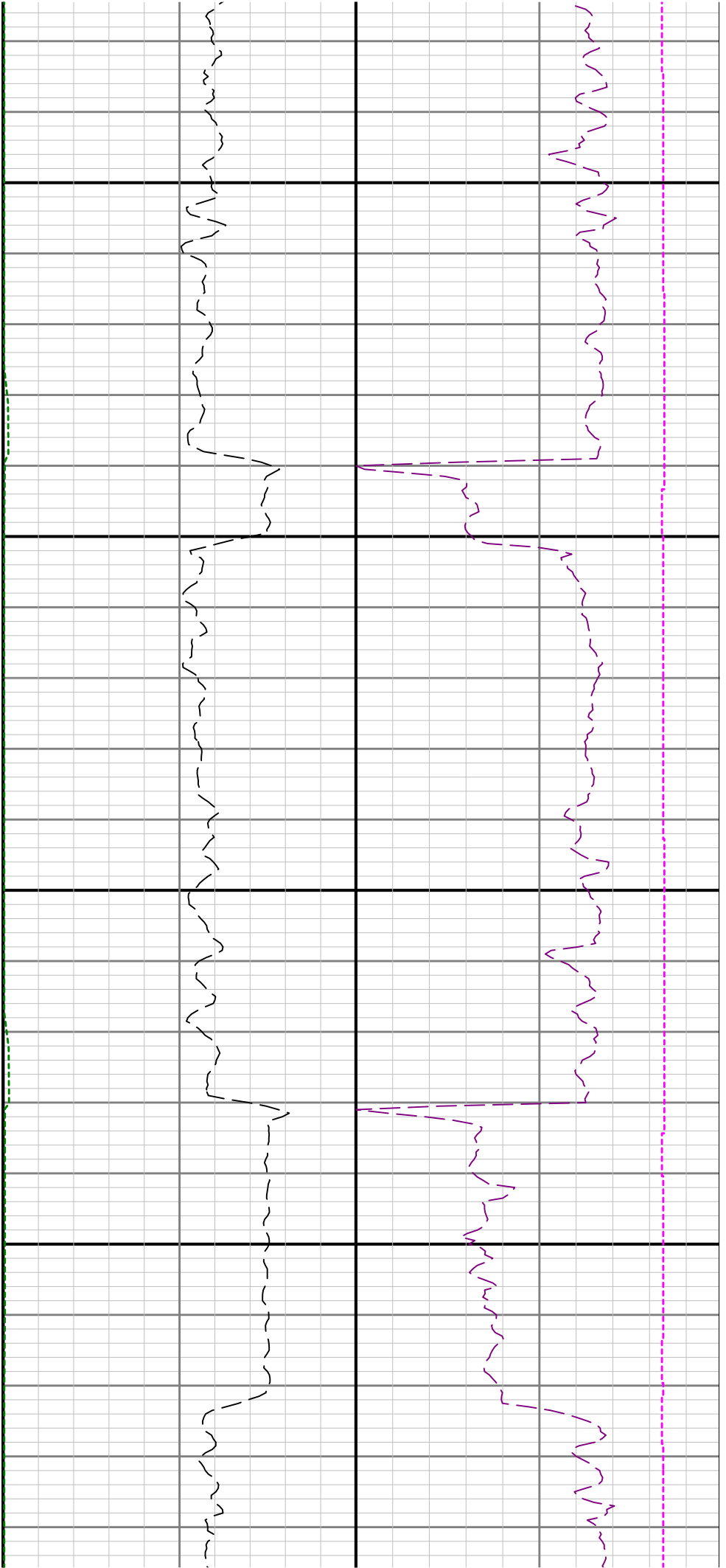


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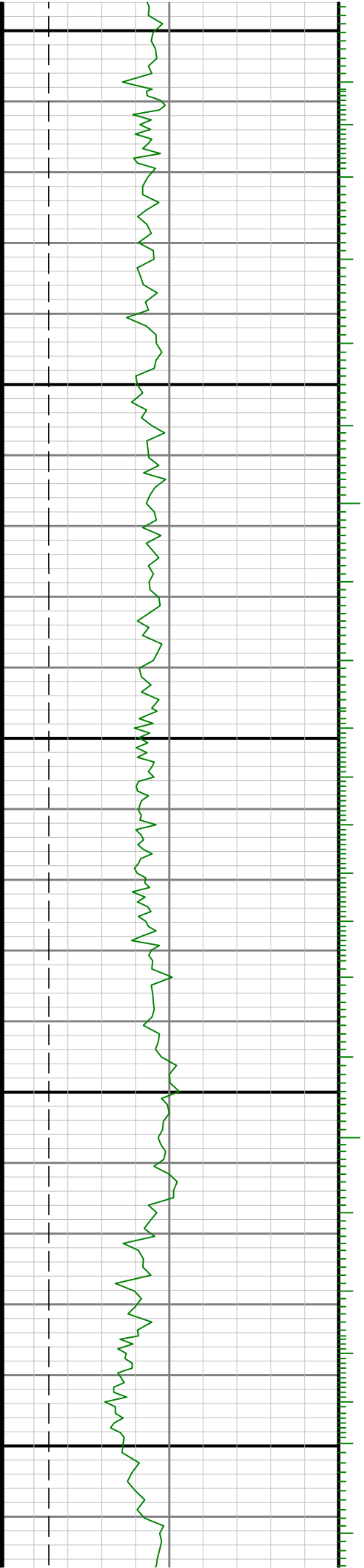


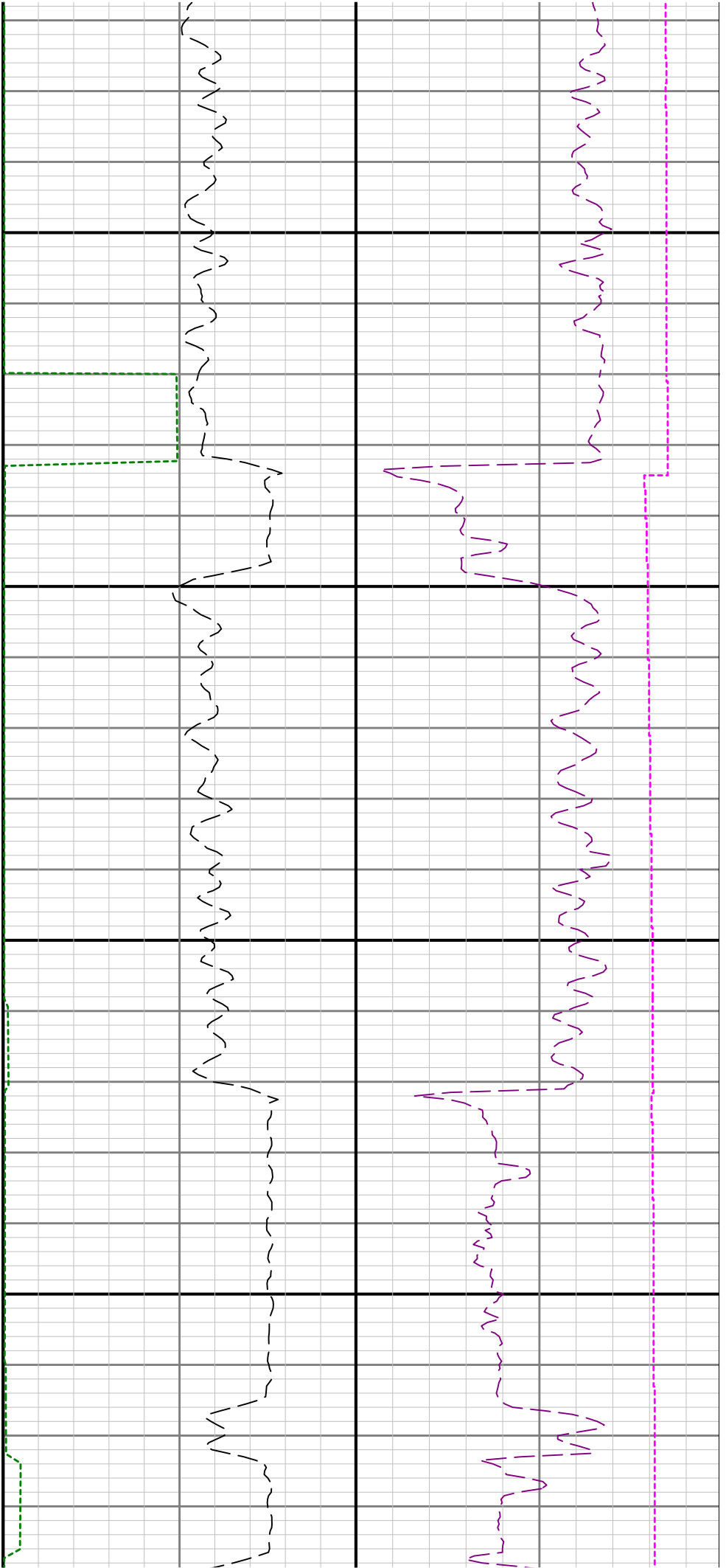


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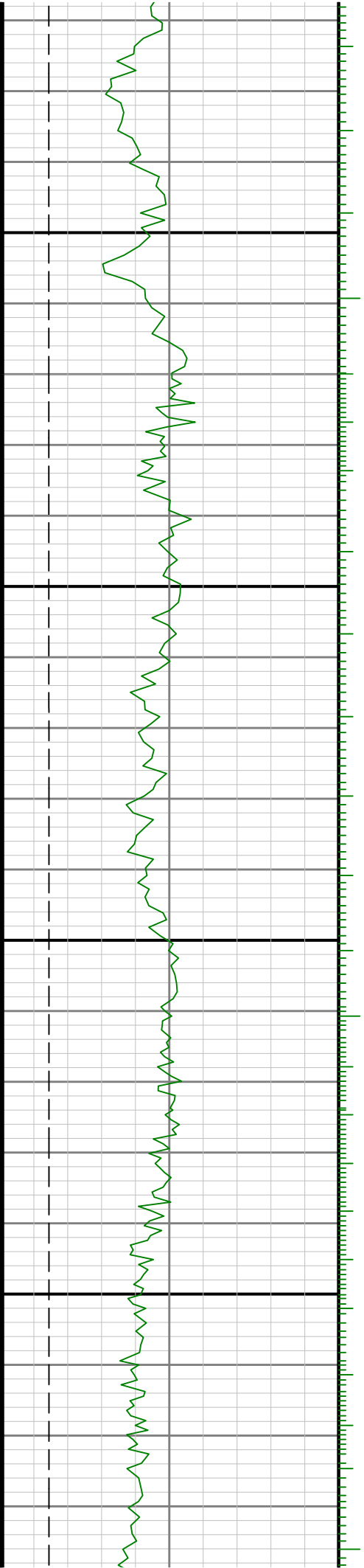
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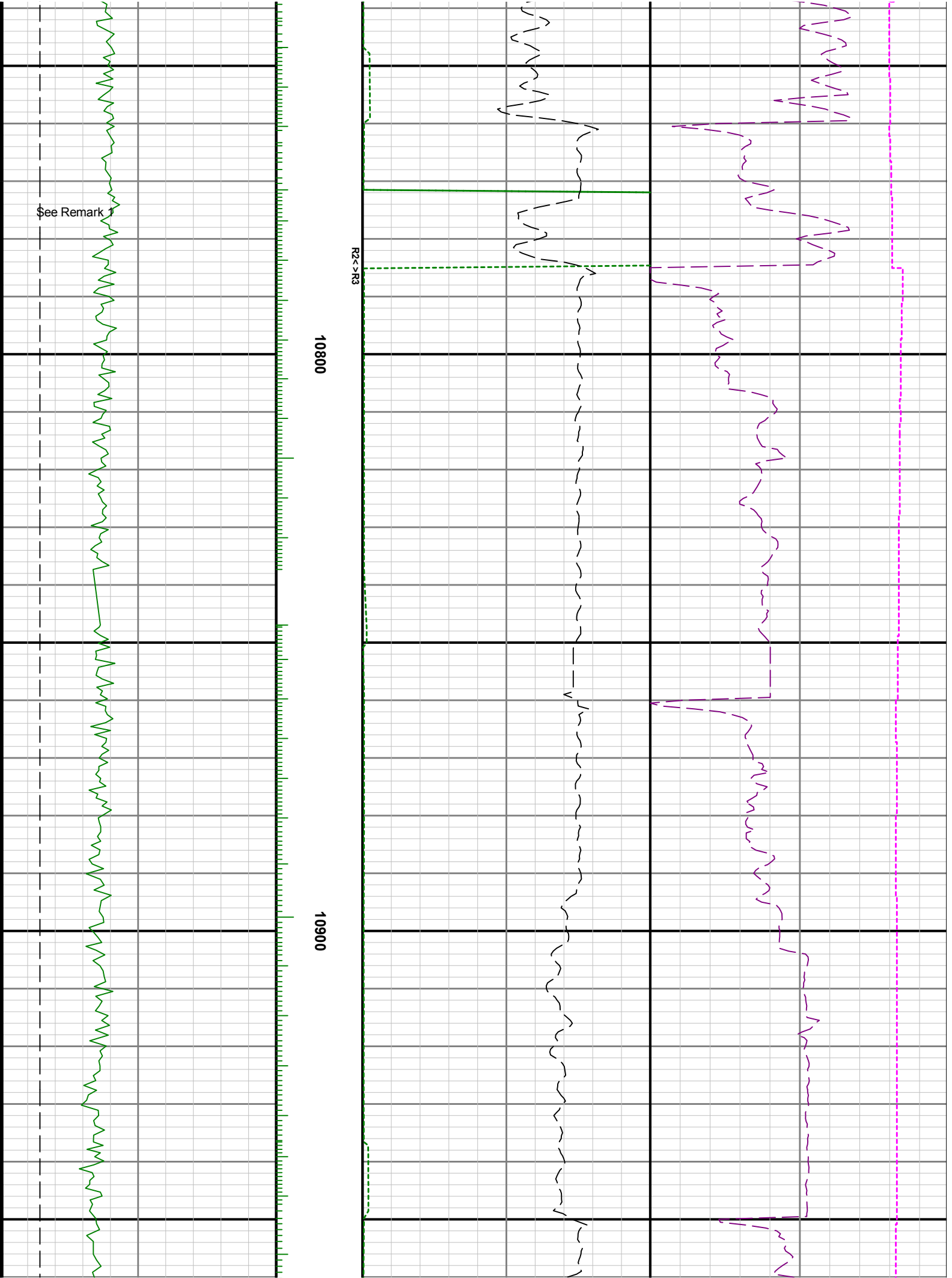


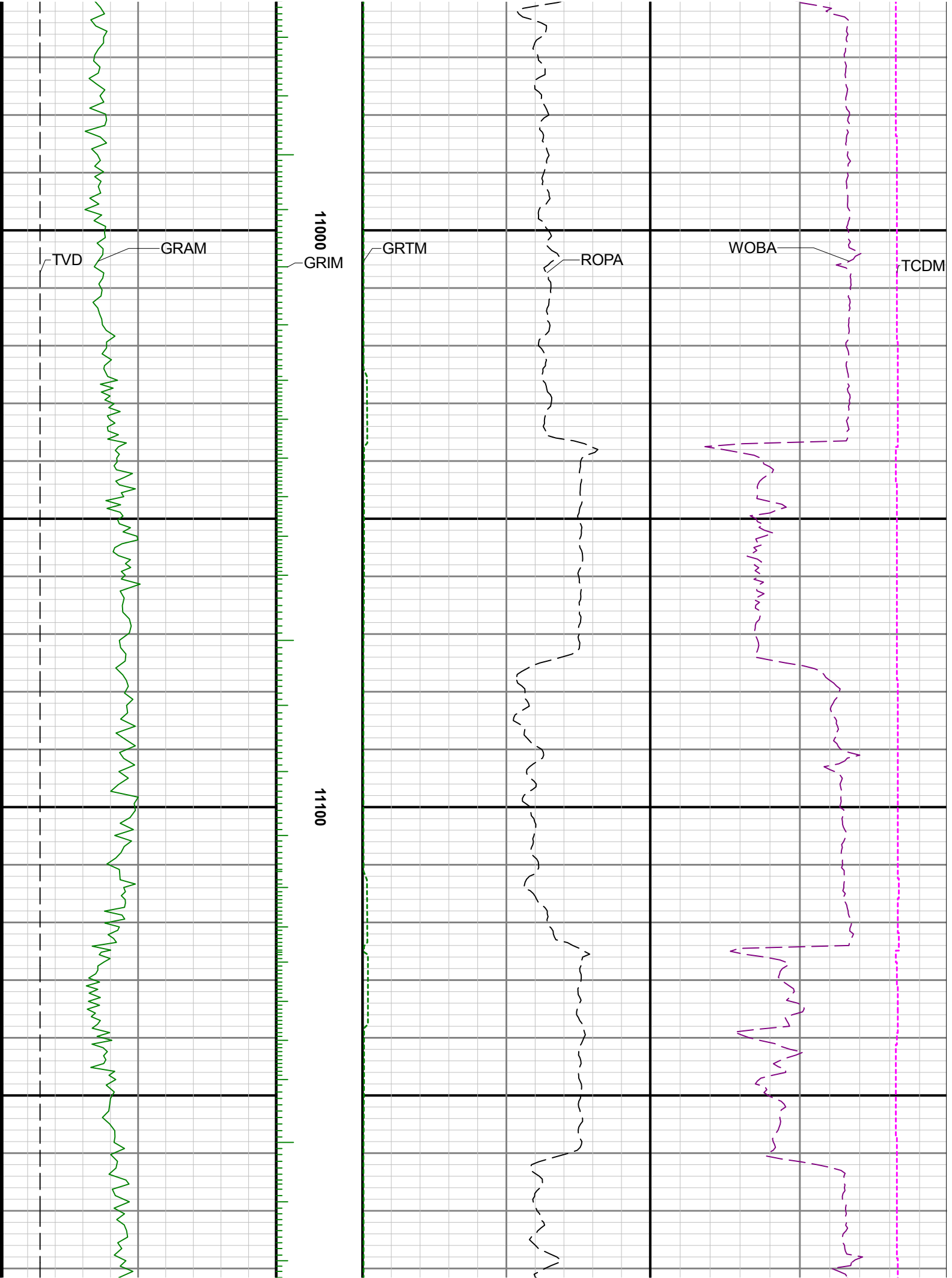


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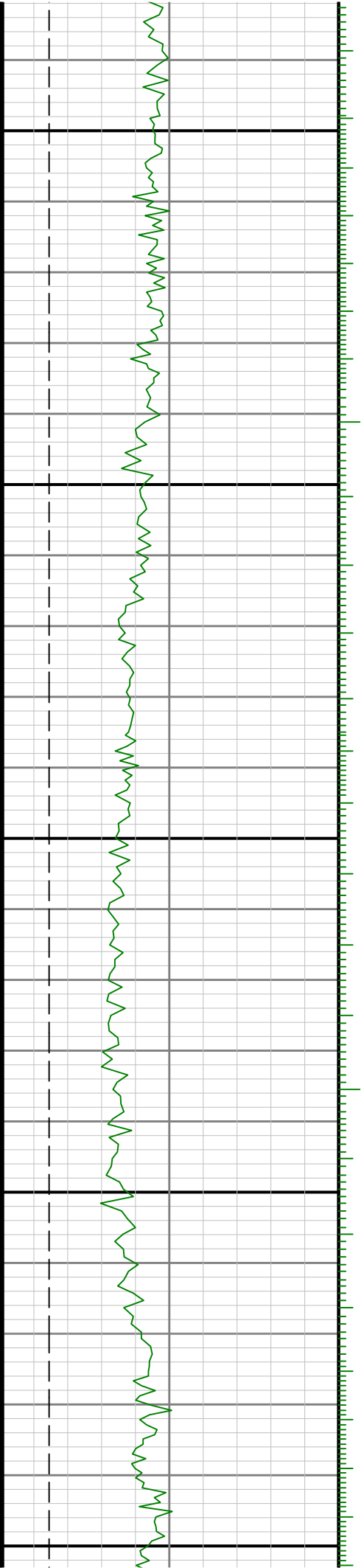


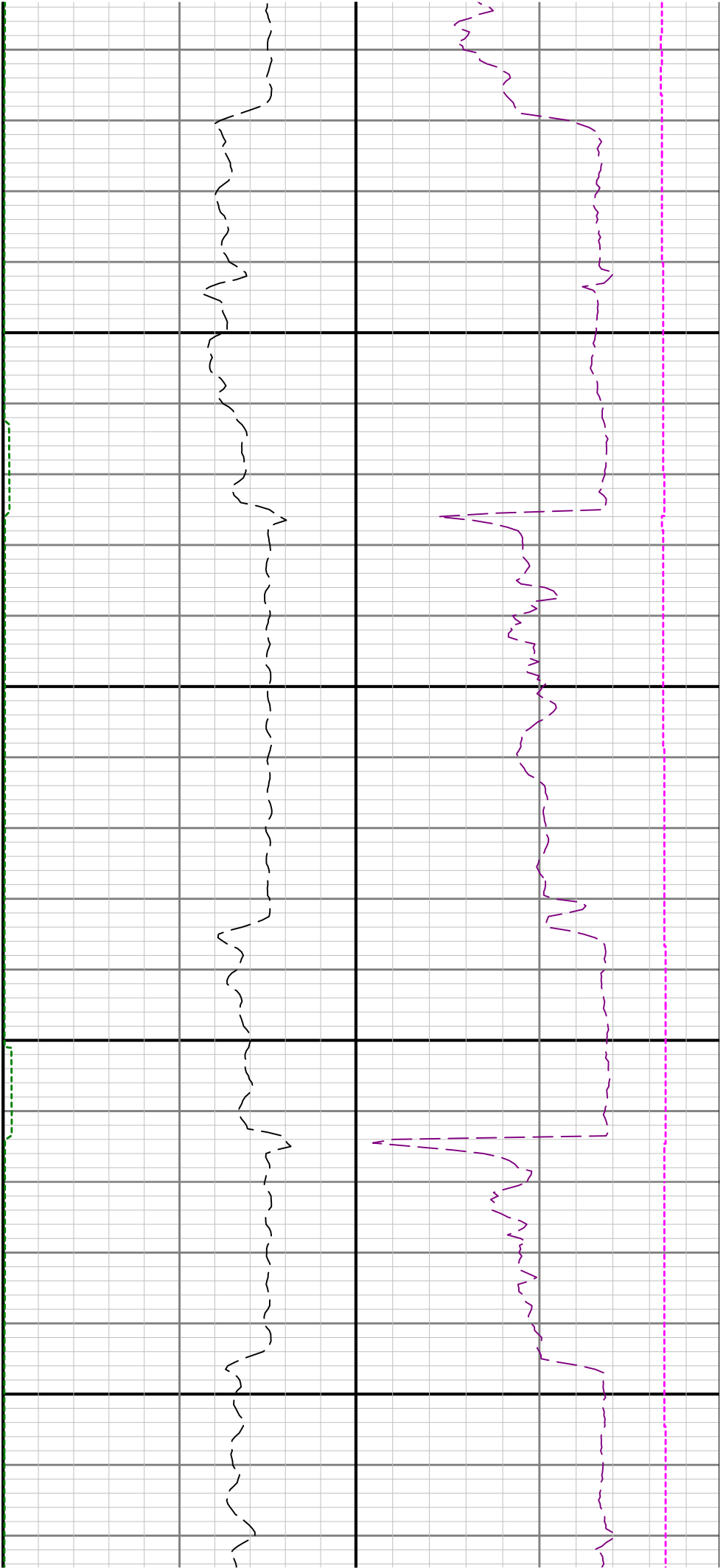


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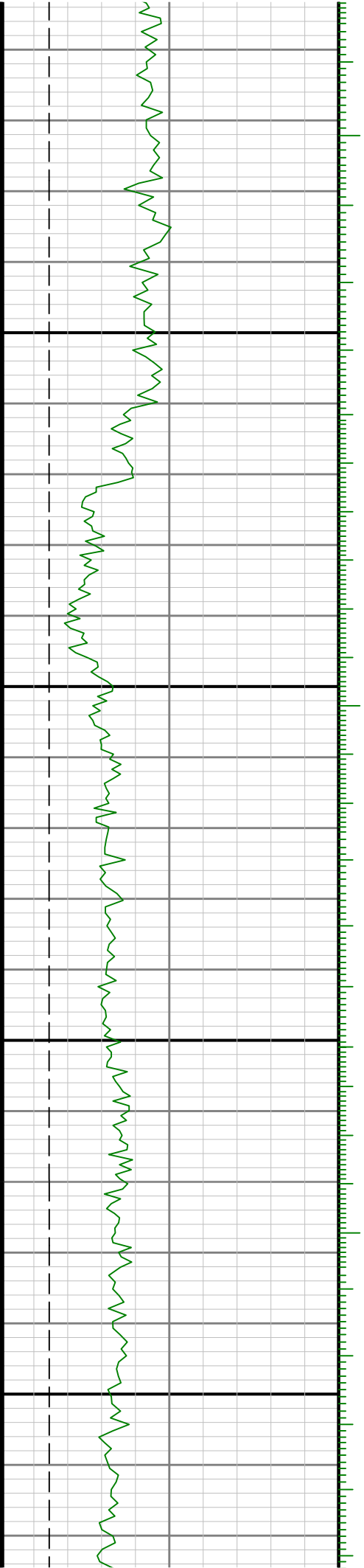
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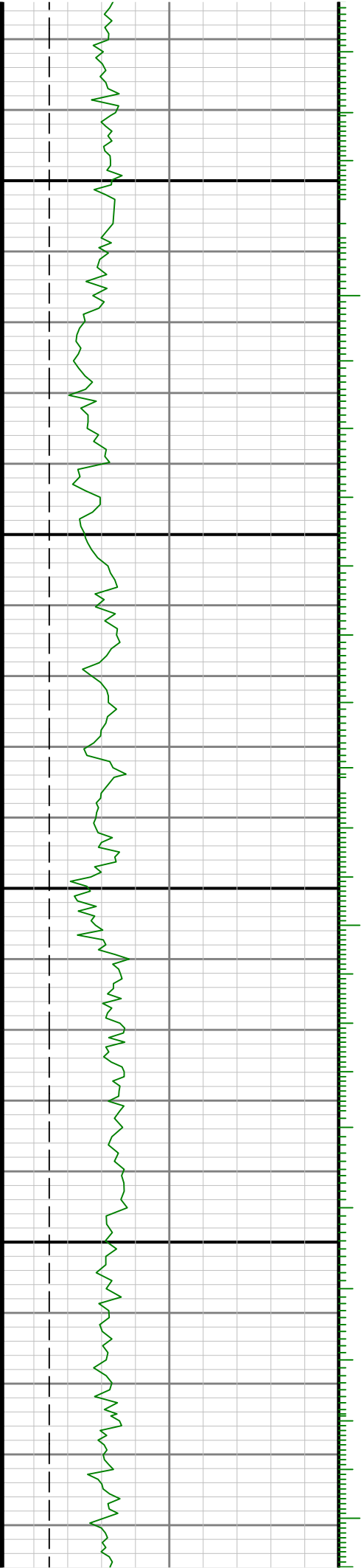
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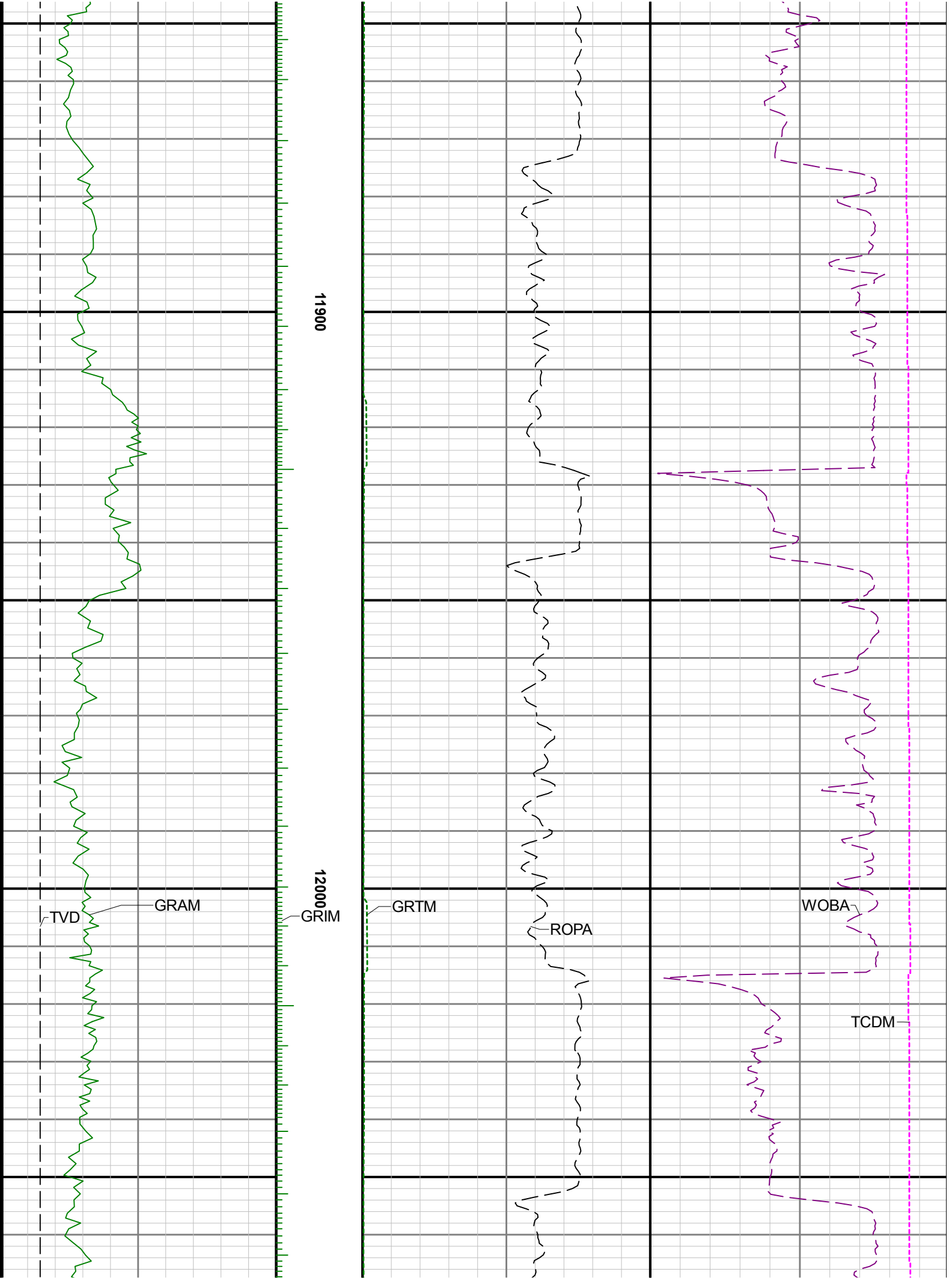


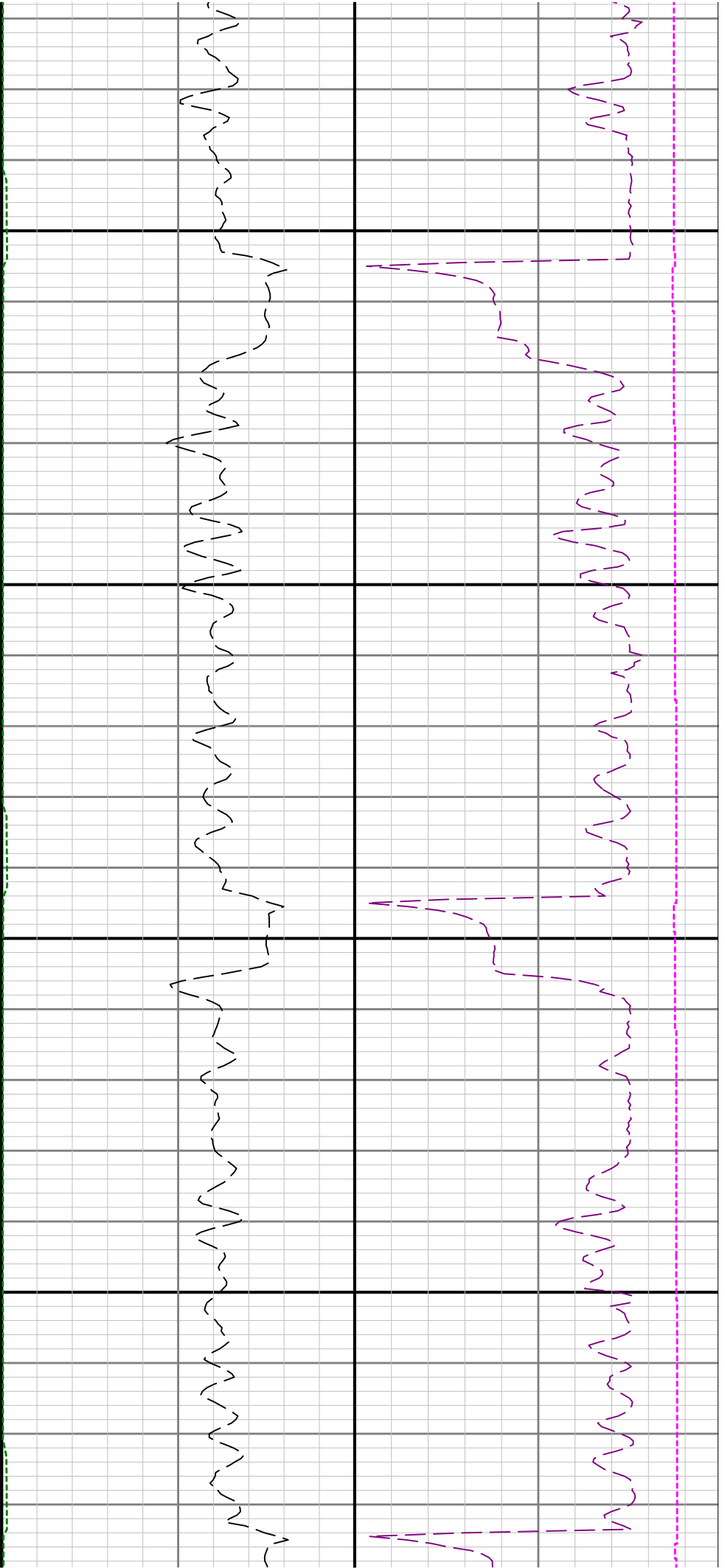


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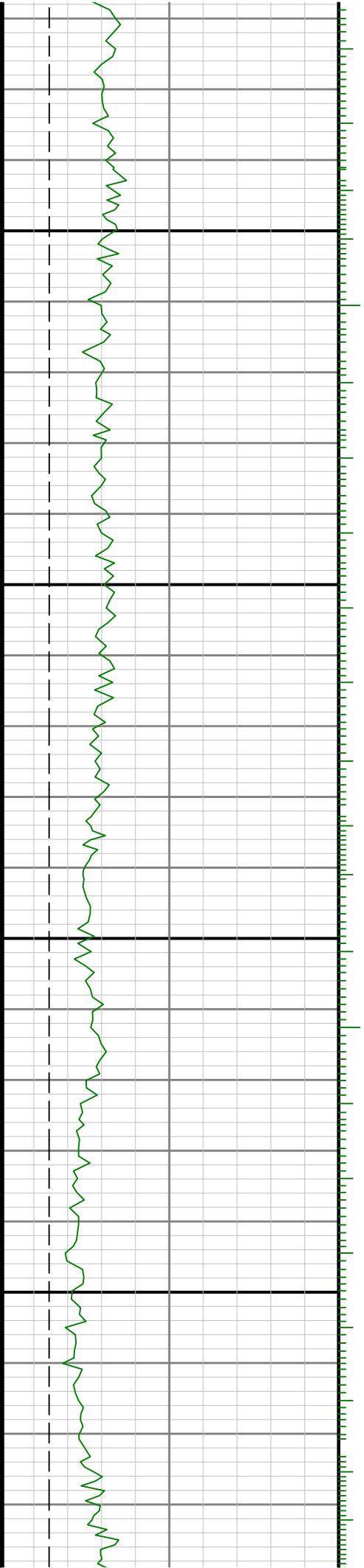


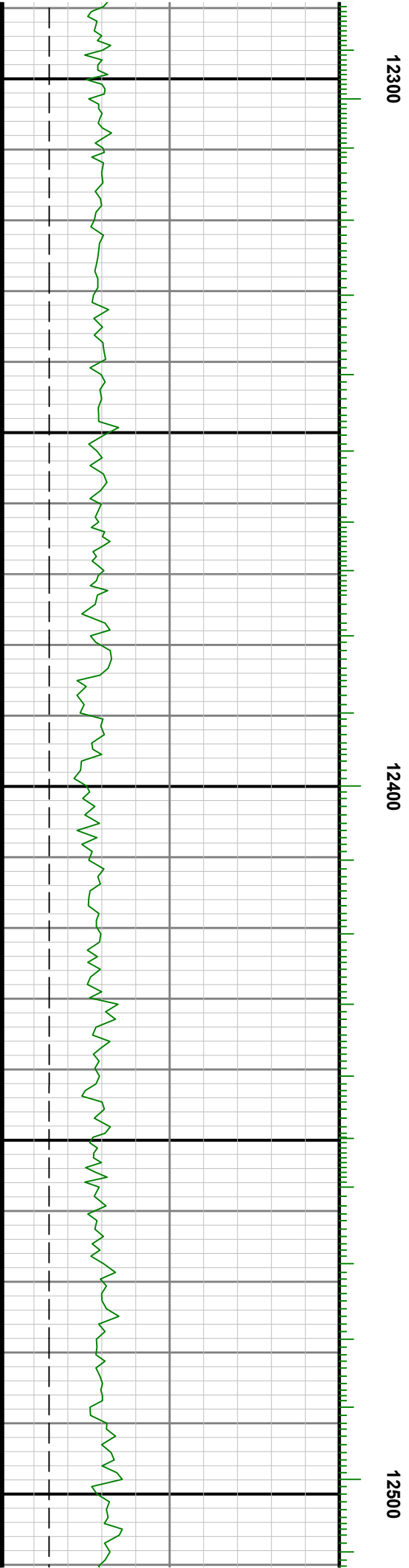
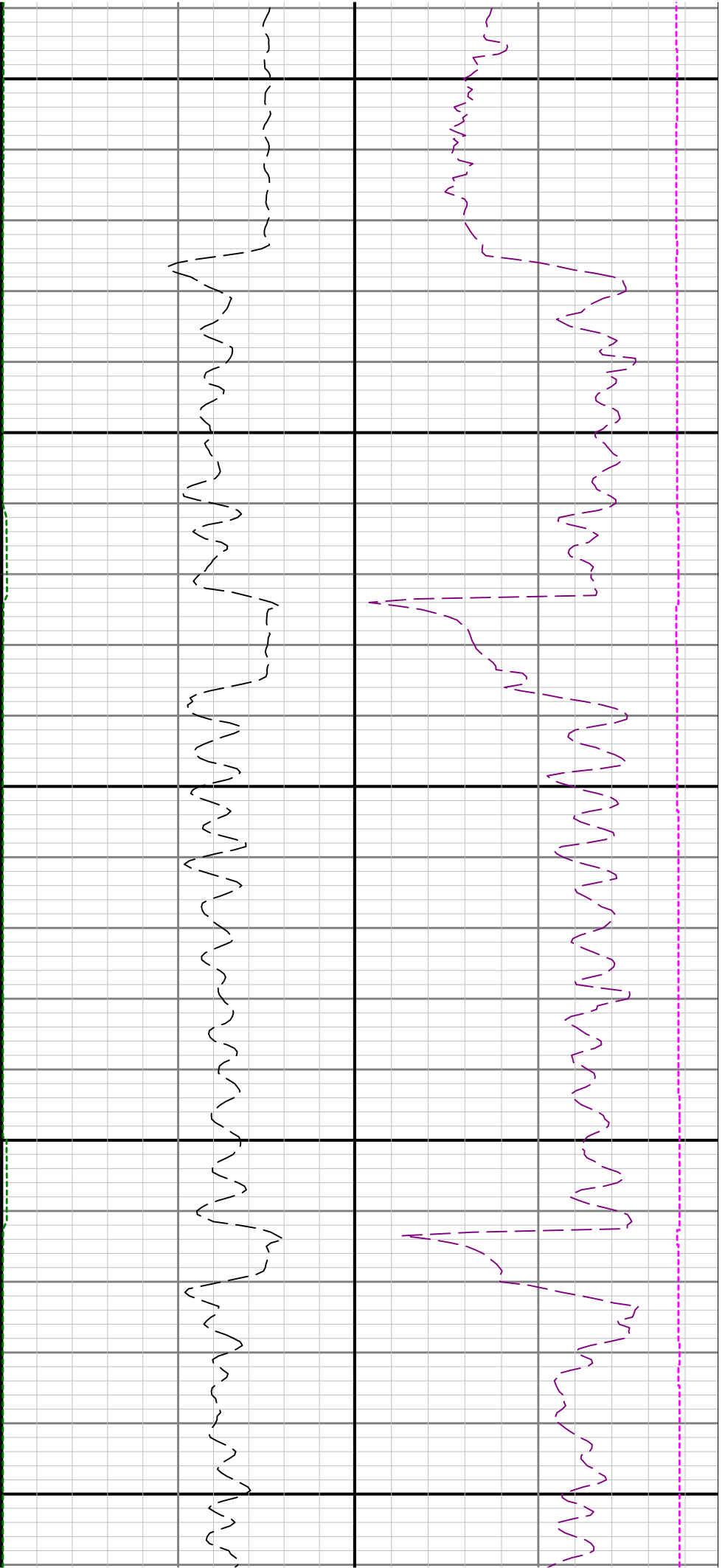


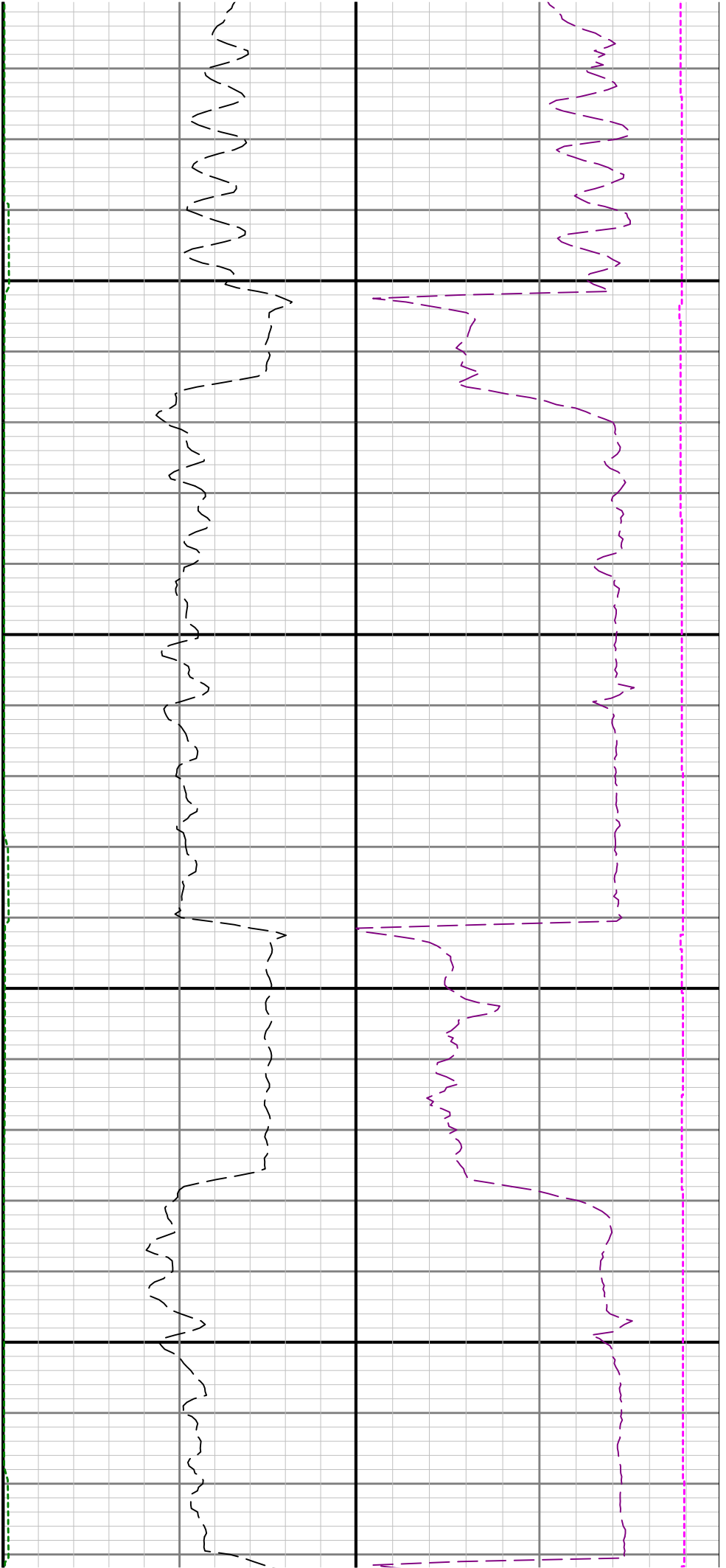


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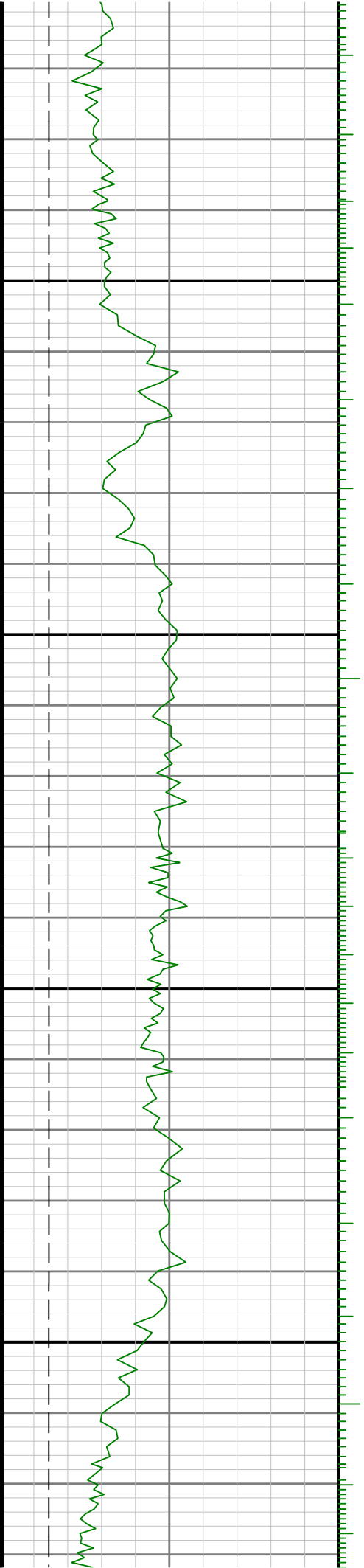


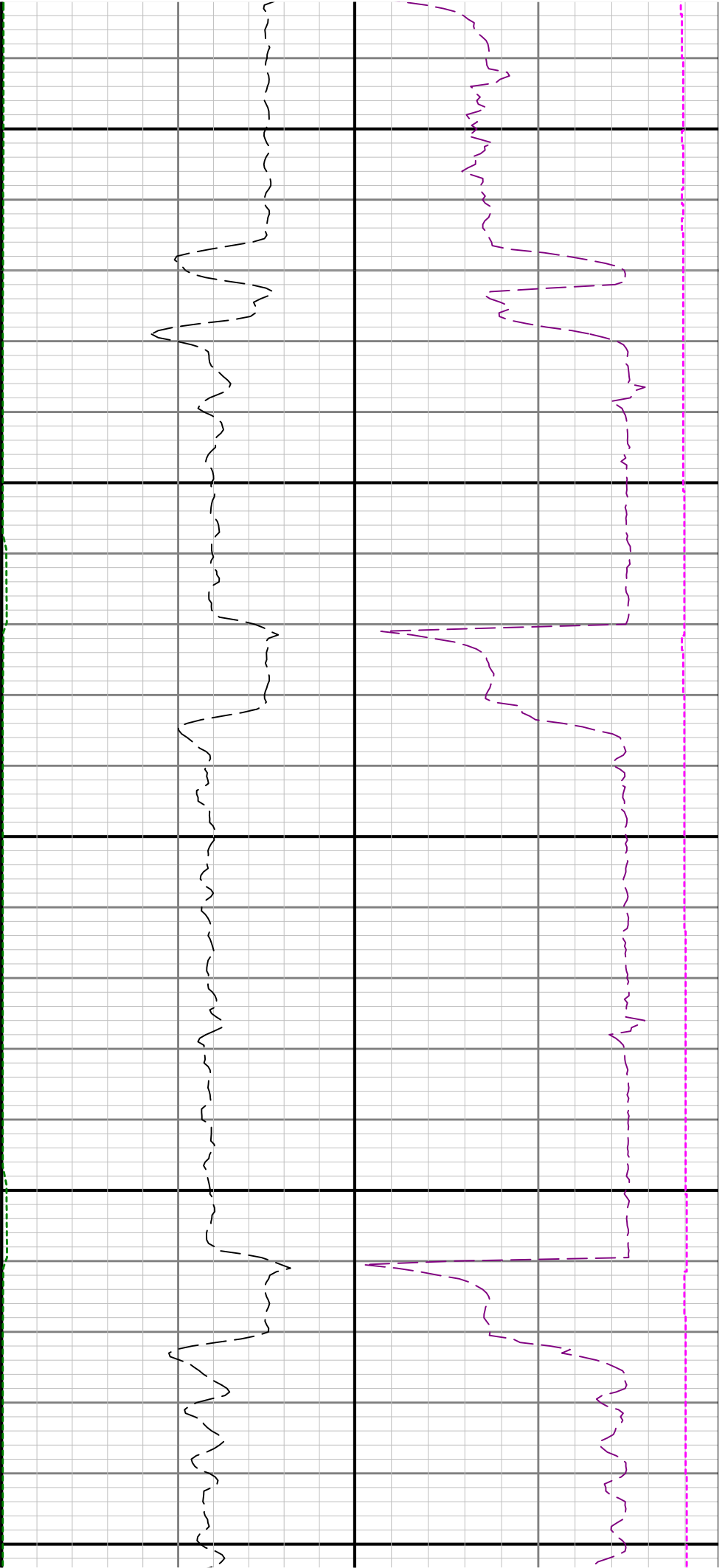




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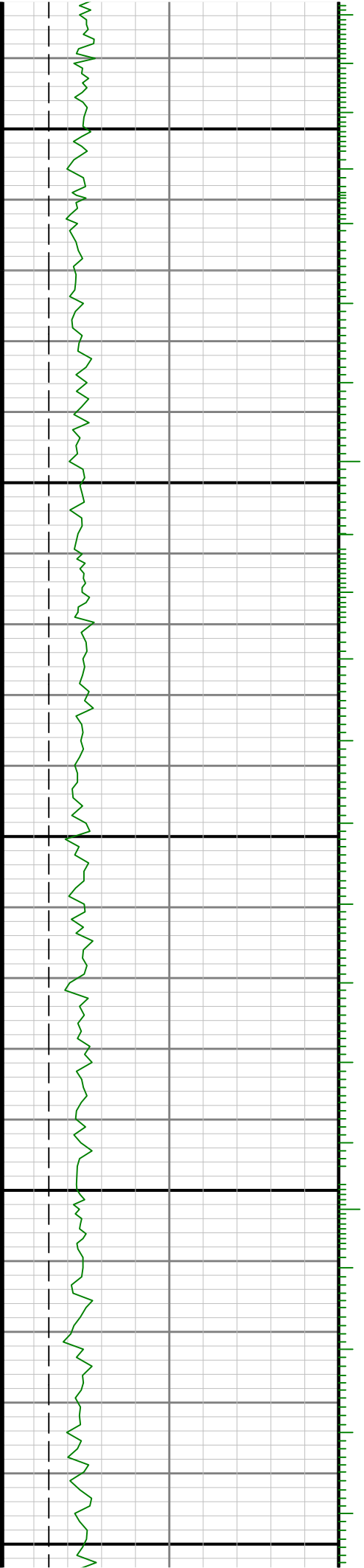
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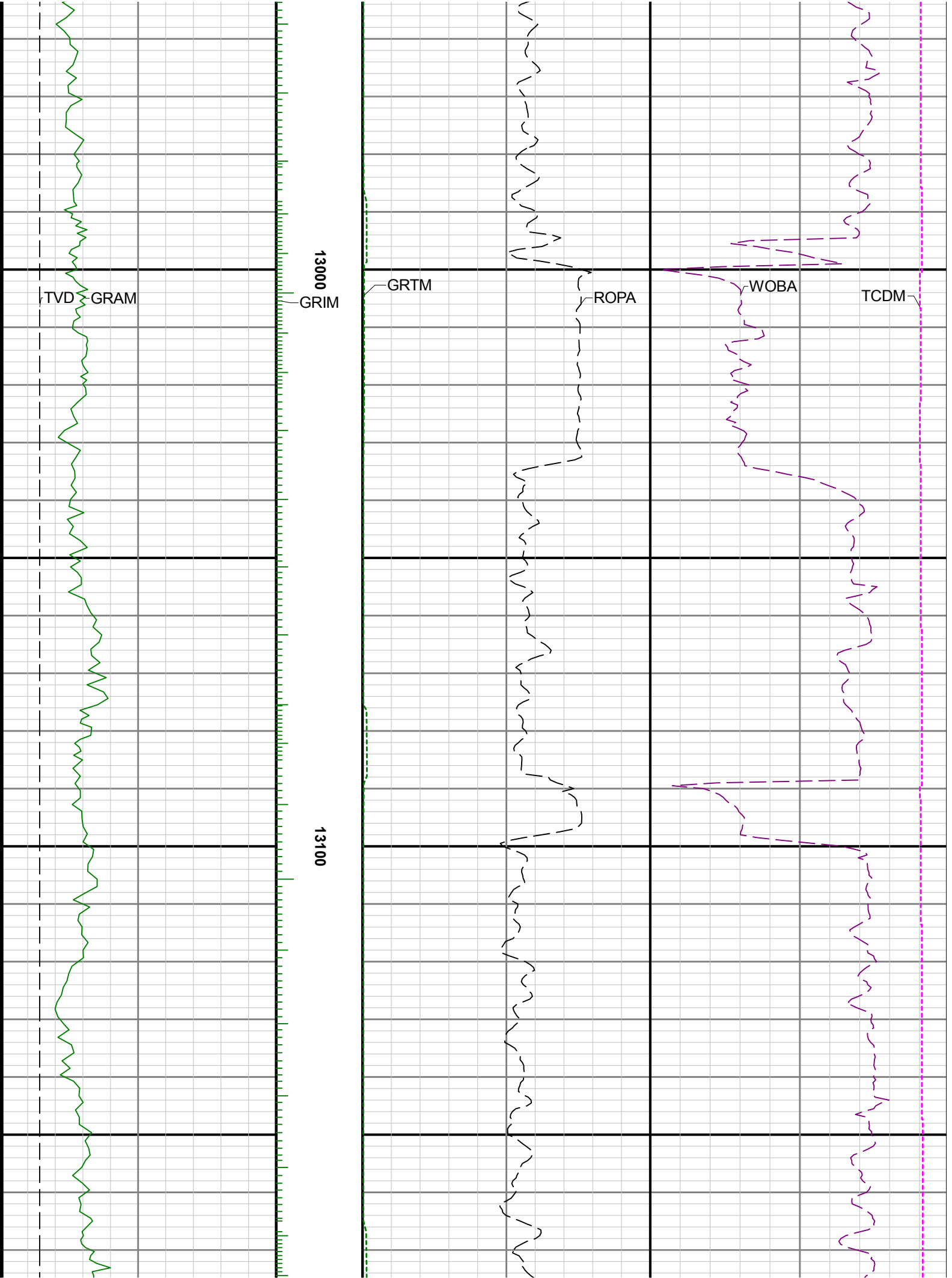


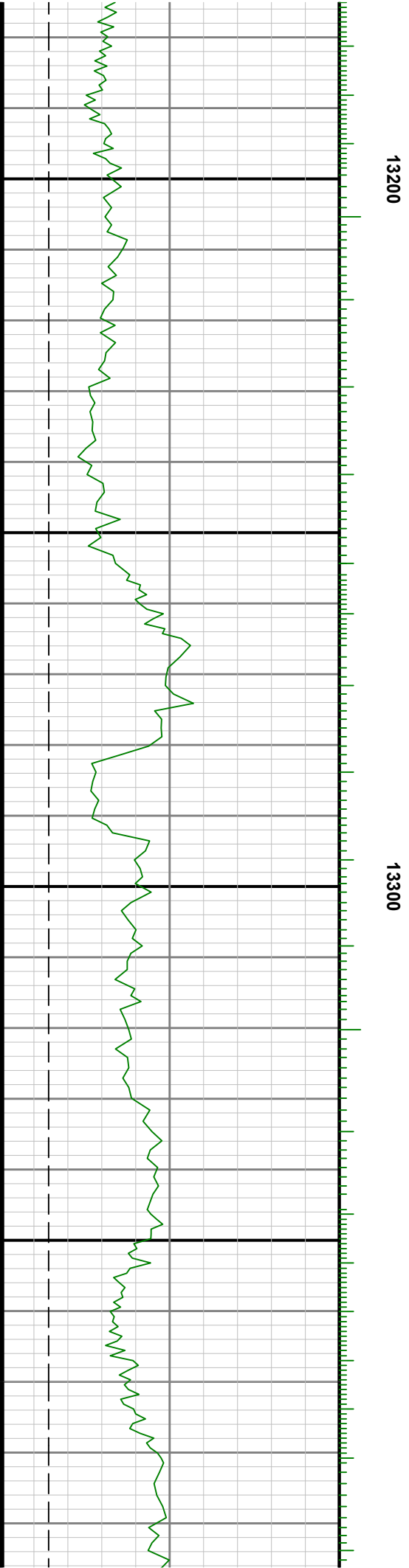
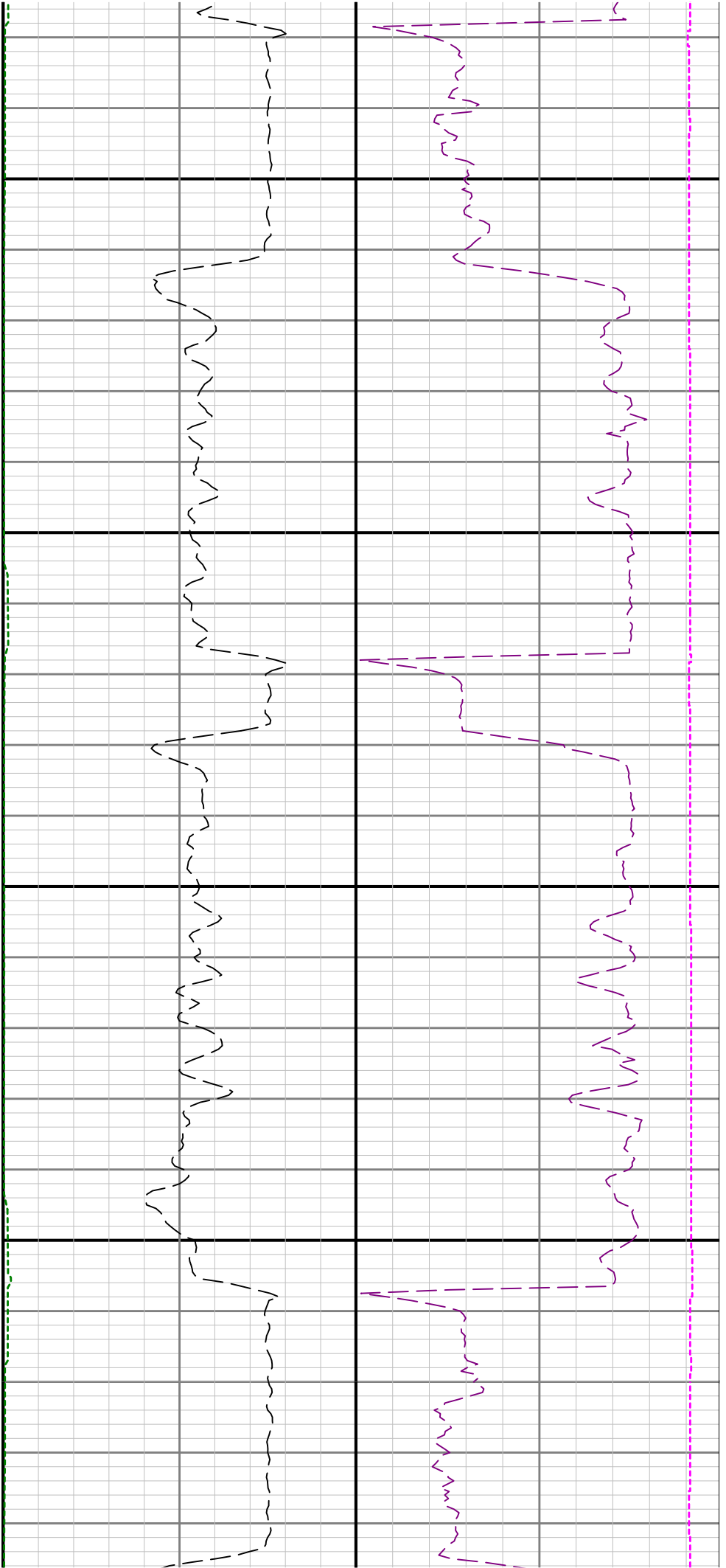


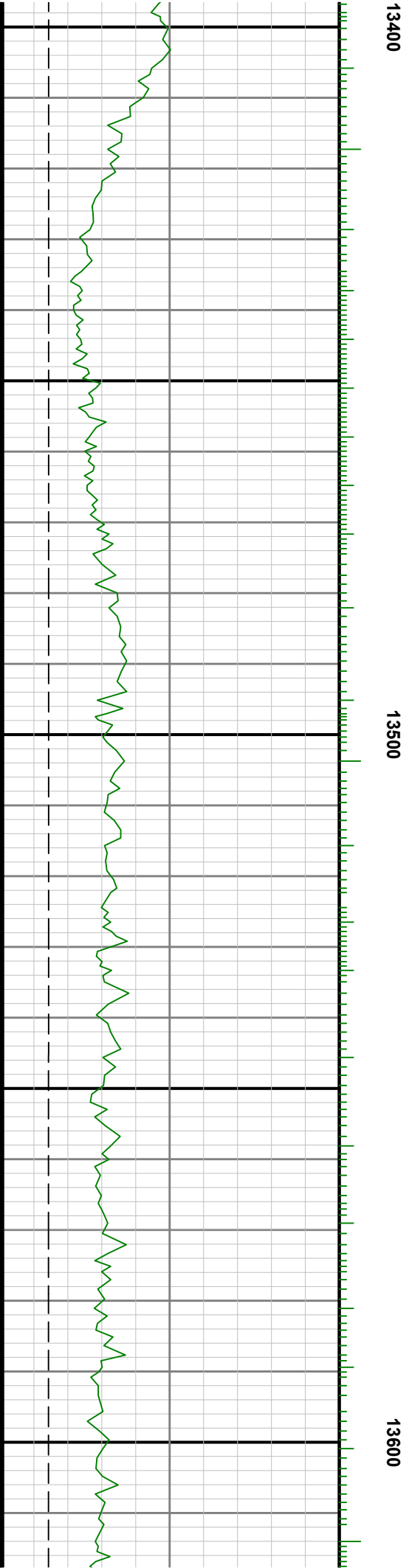
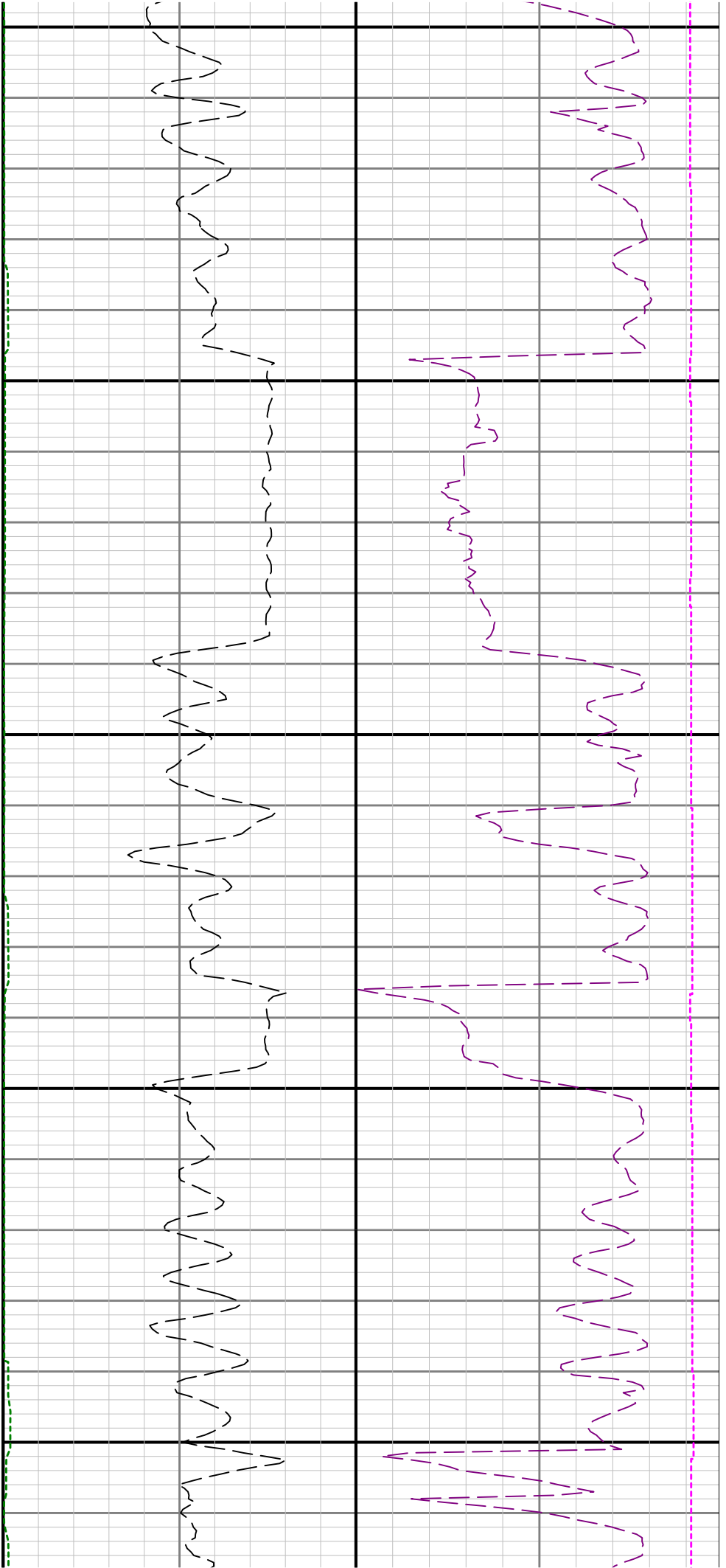
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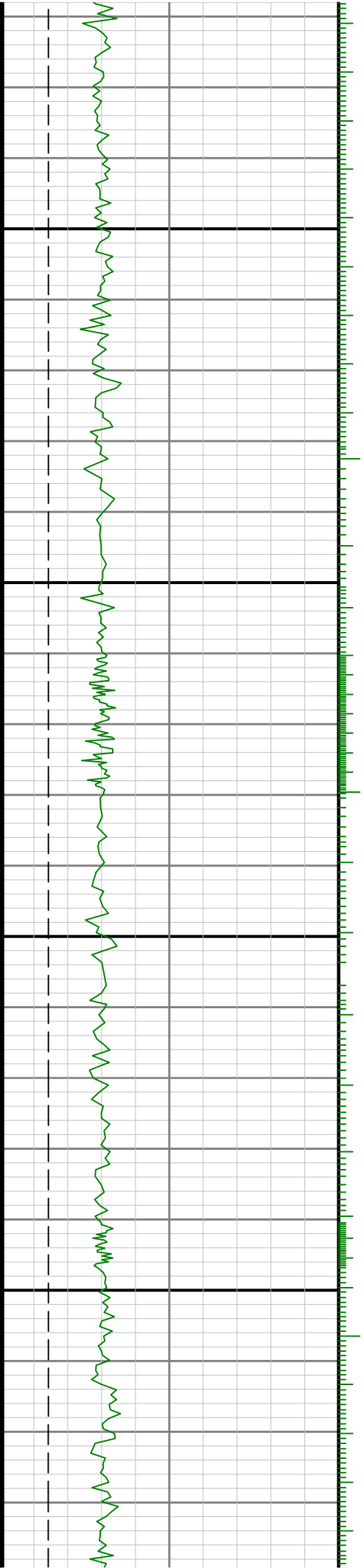


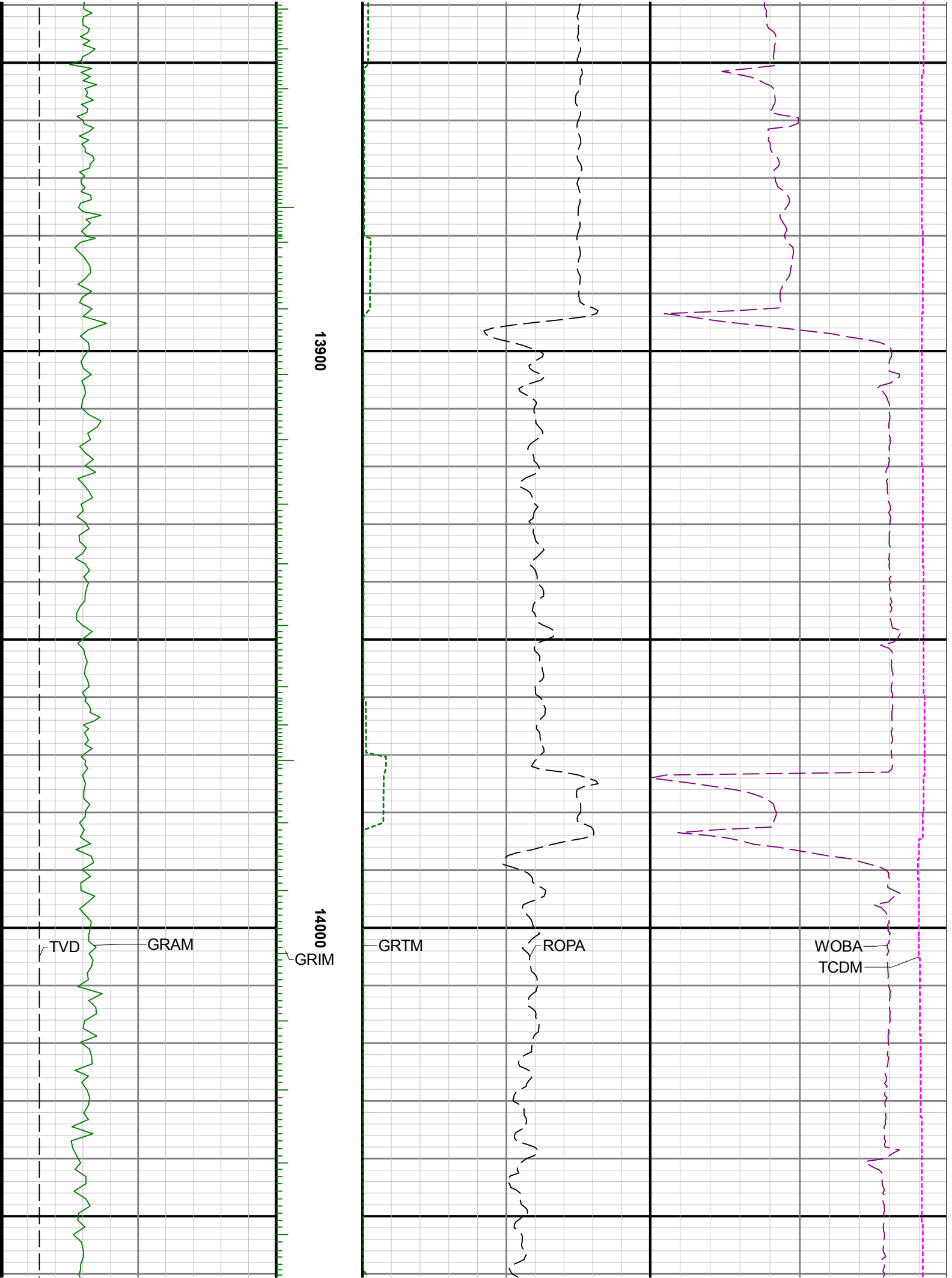


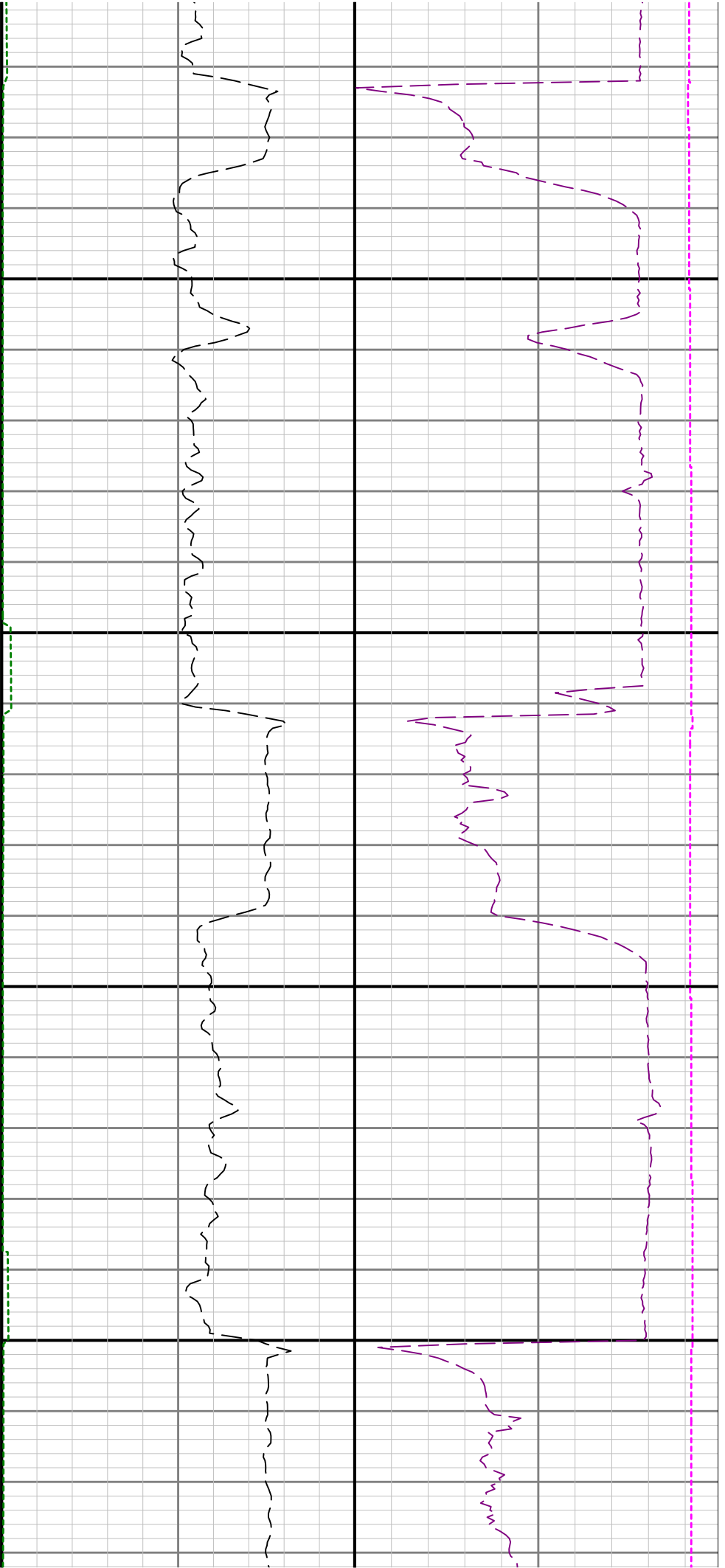


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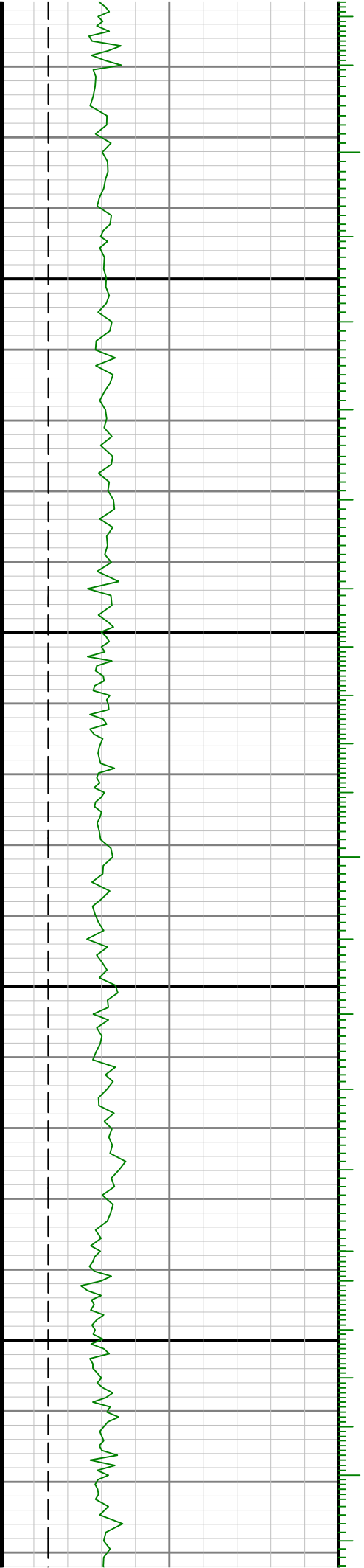


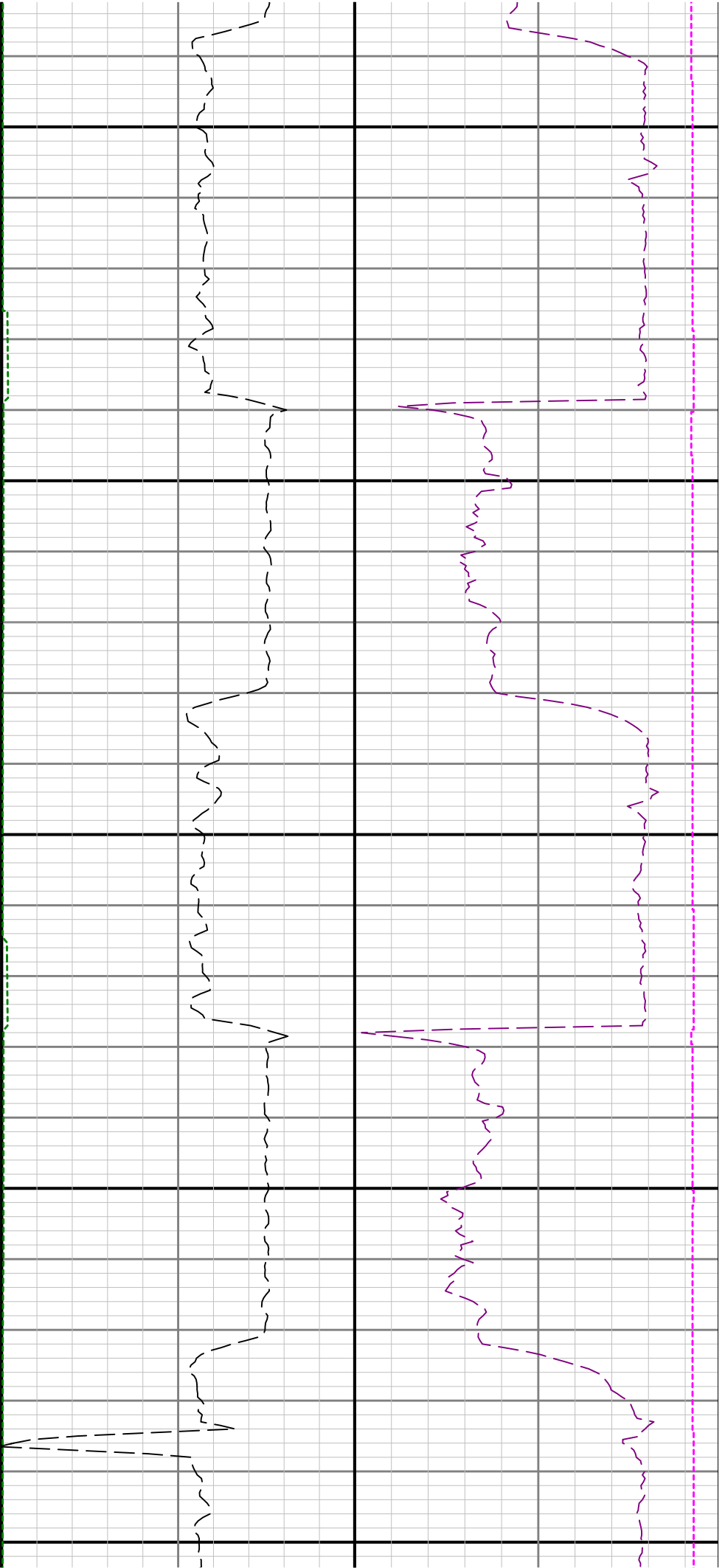




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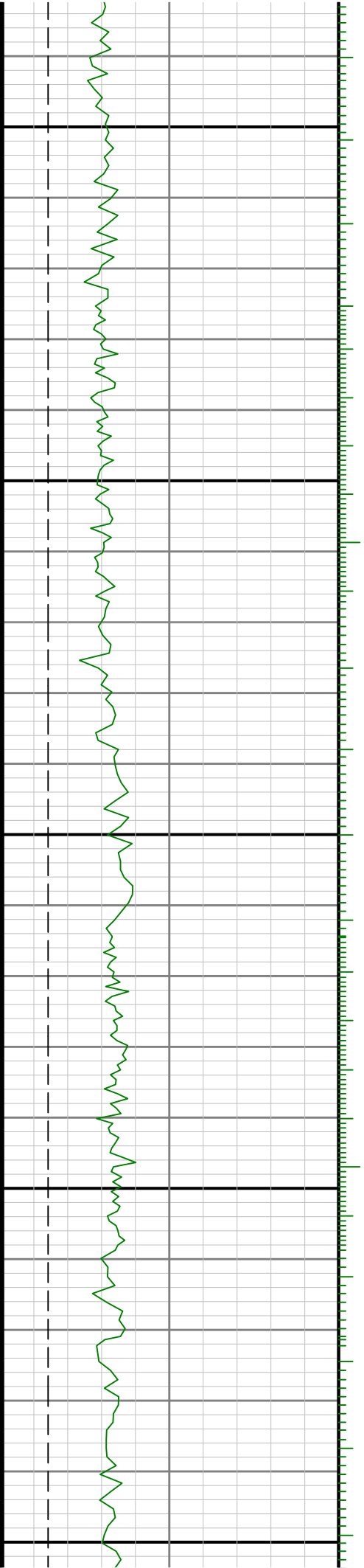


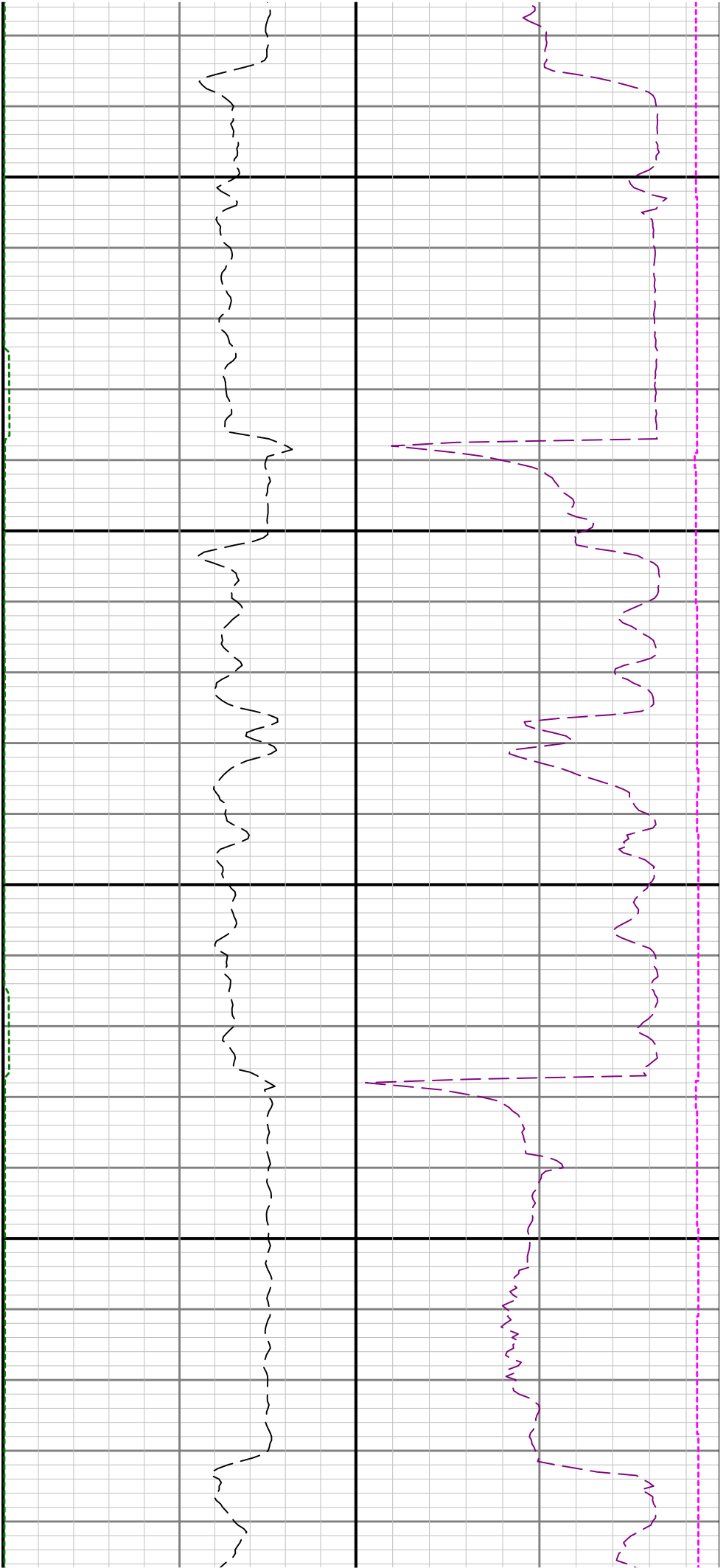


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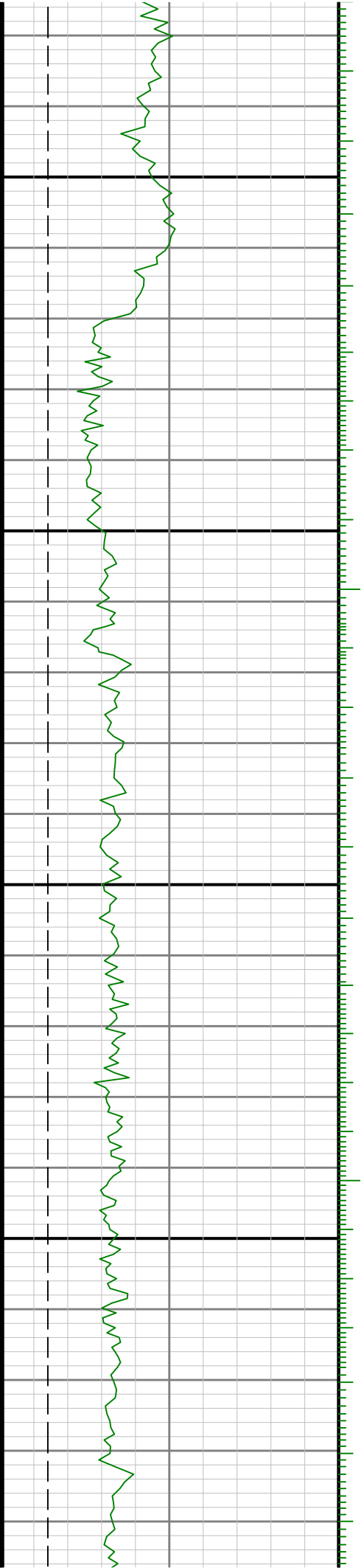
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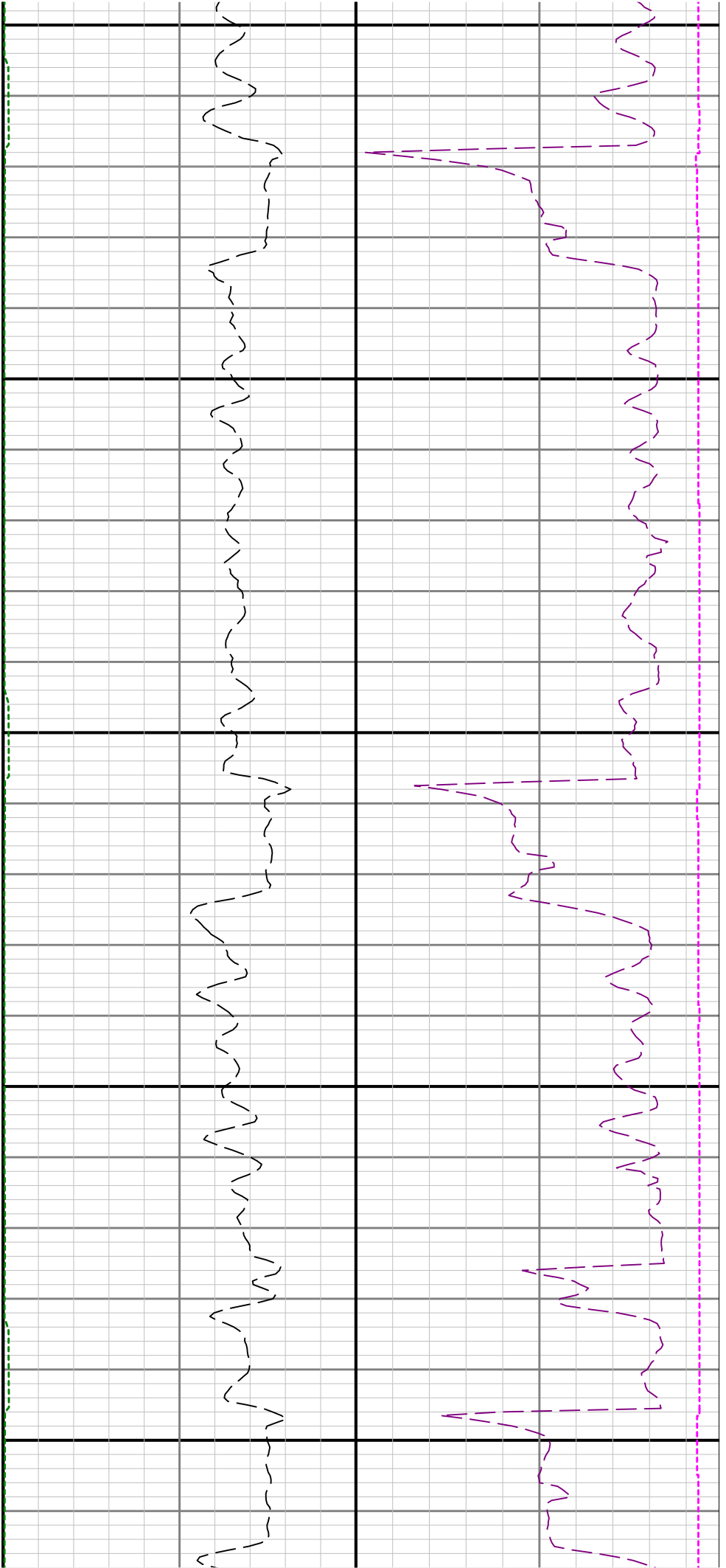




14800

14900





15000

15100

